

# ITEMS OF INTEREST.

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## *Shots from the Profession.*

### EXTRACTS OF NOTES ON ORTHODONTIA, WITH A NEW SYSTEM BY REGULATION AND RETENTION.

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Read before the Ninth International Medical Congress, Dental Section.

In studying the conditions by which we may best accomplish the movements of the teeth, we may simplify the process if we remember the movements in the line of the arch which are five: forward, backward, inward, outward and partial rotation. These, and their slight modifications, with the exception of elongation and depression, which are rare, are all we are called on to perform. The principles governing all of these movements are the same. So that, by understanding the principles governing one, we may comprehend all.

In applying force to a tooth, it should be sufficient to accomplish the movements as rapidly as is consistent with physiological law. When pressure is once applied, it should be continued without relinquishment, for there should be no retrogression of the tooth.

The appliance for accomplishing the movement of a tooth must be so perfect in design, construction, application, and operation, that there should be no need for its removal till its object is accomplished.

#### RETAINING APPLIANCES.

After the mal-posed tooth has been moved into the desired position and proper occlusion secured, it should be firmly supported and retained till it has become firm in its new socket. "The importance of a steady support and rest while the tooth is becoming firm is well illustrated," says Guilford, "in the necessity of placing a fractured limb in immovable splints."

A strip of 32 to 36 gage platina, about  $\frac{1}{8}$  of an inch wide, is

made into a loop and slipped over the tooth to be banded. The ends are now grasped close to the tooth with a pair of flat-nosed pliers, and the band drawn tightly round the tooth, a strong burnisher being applied at the same time to still further make it conform to the shape of the tooth. A small bit of solder is now placed in the band at the junction, and all carried in contact with the flame of the soldering lamp. After it is soldered the ends are chipped off, and the band is now complete and ready for any attachments which may be made; after which it is cemented in position on the tooth.

For accomplishing the different movements of the teeth, I use the following simple appliances:

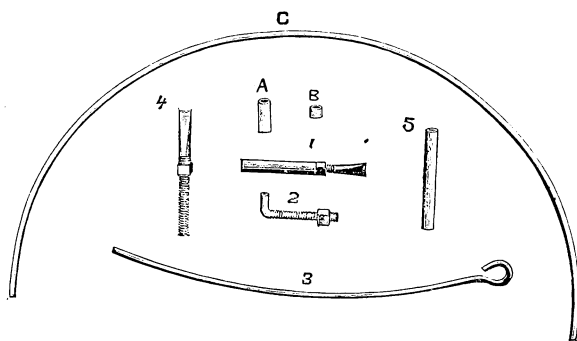


Fig. 1.

Fig. 1. shows two forms of the screw: one for pushing, as shown at 1; one for pulling, as shown at 2; and a lever for rotating, as shown at 3. For making and using these appliances, use Stubb's steel wire of 2 sizes. You will also need jewelers' gold plated wire, and hollow wire, or, as it is known among jewelers, "joint wire," which may be of either gold or silver, and a few pieces of piano wire. The screw for pushing is made by cutting a thread on a piece of Stubb's steel wire of the desired size and length. One end of this screw is beaten flat, and to the other end is screwed a small nut made of platinized gold. This complete is shown at 4. A piece of the joint wire is now sawed off the desired length. The screw is slipped into this pipe and the whole is now complete and ready for use, as shown at 1. This style of screw may be made any size or length; the largest I have yet made being  $2\frac{1}{2}$  inches in length, the shortest  $\frac{1}{4}$  inch.

The traction screw is made of Stubb's steel wire, in a similar manner to the screw just described, with the exception that one end of the screw is bent sharply at right angles. The screw complete is shown at 2. The entire length of the screw is about  $\frac{3}{8}$  of an inch, the angle or bent portion  $\frac{3}{32}$  of an inch.

The lever is made of a piece of piano wire (No. 13), about  $2\frac{1}{2}$  inches in length bent at one end into the form of an eye. It is shown complete at 3.

Rotation by means of this instrument is accomplished by banding the tooth to be rotated. Before cementing the band in position on the tooth, a piece of joint wire  $\frac{1}{4}$  inch long is soldered on to the band on the labial or buccal surface at right angles to the axis of the tooth. The band is now cemented in position on the tooth. The straight end of the piano wire is inserted into the little pipe in the band. The other end sprung round and made fast by a wire ligature to the tooth nearest the eye in the end of the lever. Fig. 2. shows an

incisor being rotated by this method.

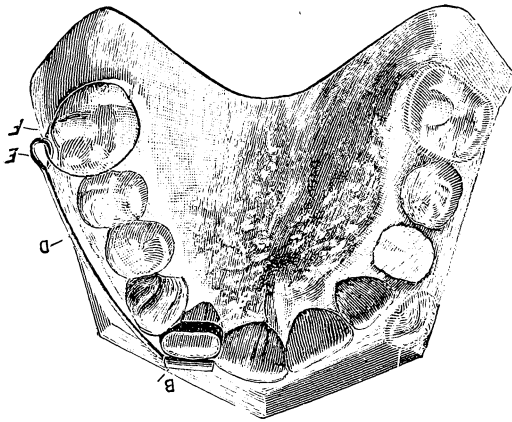


Fig. 2.

After the tooth has been moved into position it is retained by removing the spring and inserting a piece of the gold plated wire into the tube from the opposite side, long enough for the end to rest on the labial surface of the tooth adjoining, as shown in Fig. 3. The

piece of wire is prevented from turning or working out, by passing a fine drill through the pipe and one side of the wire, and inserting a neatly fitting piece in the hole thus made.

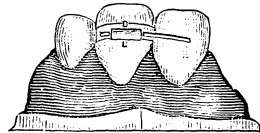


Fig. 3.

For accomplishing the movements of a tooth from *within outward* into the line of the arch, the screw first described is used in the following manner: The tooth to be moved is banded and piped in the same manner as described in rotation; then into the palatial side of the band is formed a slot, into which is inserted the flat end of the screw. Resistance is gained for the base of the screw by selecting a sufficient number of teeth to completely resist the pressure of the moving tooth.

These teeth are banded and piped close to the gum, and on a line with it. A piece of the gold plated wire is threaded through these little pipes, either before or after cementing the bands in position. Against this wire is placed the base of the pipe encircling the screw. A suitable notch is fitted into the end of the pipe, to fit the wire and

prevent it from slipping; or, if this wire of resistance is placed on the outside of the arch, as may be done with advantage in many cases, the base of the pipe is rested against one of the bands encircling one of the teeth. It is prevented from slipping by soldering it in position, or by plugging the end of the pipe, and filing it to a sharp point. The point rests in a pit formed in the band. Fig. 4 shows the screw

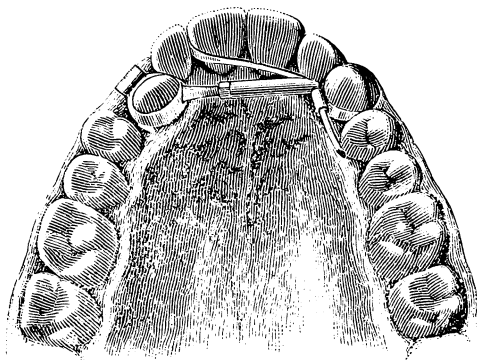


Fig. 4.

in position in moving an inlocked cuspid. Force is applied by tightening the nut with a small wrench after the tooth has been moved into the line of the arch. If the movement of rotation is necessary the lever is applied, after which it is retained by inserting a piece of the plated wire into the little pipe. The end of the wire

resting against the outer surface of the tooth on each side is shown in Fig. 5. The movement of a tooth *inward* into the line of the arch is accomplished by banding the tooth. To the palatal side of the band, close to and on a line with the gum, is soldered one of the little pipes  $\frac{3}{32}$  of an inch long. Into this pipe is hooked the angle of the traction screw. Resistance is gained by banding piping on one or more teeth on each side of the tooth to be moved, the pipes being soldered close to and on a line with the gum. Through these little pipes, either before or after cementing in position, is threaded a piece of the plated wire.

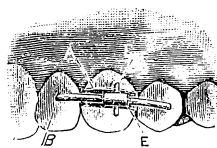


Fig. 5.

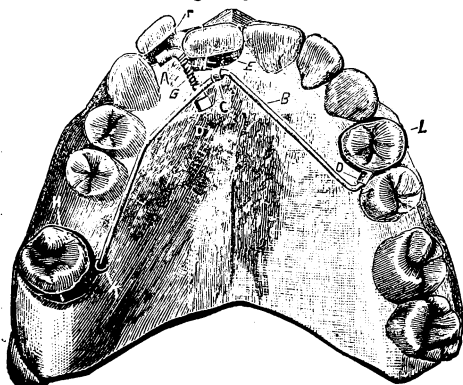


Fig. 6.

Pressure is now exerted by the screw pulling through, and the nut working against the end of another of these little pipes soldered to the wire of resistance. Fig. 6 shows a lateral incisor being drawn into line. The nut is tightened as often as necessary. The end of the screw is snipt off from time to time to prevent its chafing the tongue.

After the tooth has been drawn into line, the wire of resistance and the traction screw are removed, and the tooth is retained in position by inserting a piece of little pipe before occlusion of the traction screw. The wire being long enough for the ends to rest against the palatal surface of the tooth on each side, as shown in Fig. 7. The retaining wire is held in position, as shown in Fig. 3.

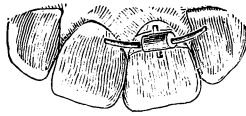


Fig 7.

The movement of a tooth backward in a line of the arch is accomplished by banding the tooth to be moved. To the outward surface of the band is soldered one of the pipes  $\frac{3}{32}$  of an inch long, at right-angles to the tooth, and line of the arch. Into this pipe is

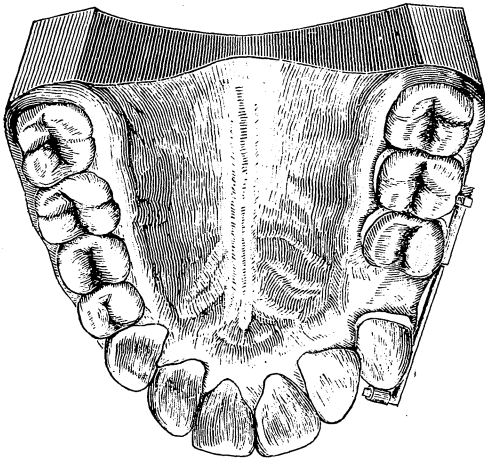


Fig. 8.

hooked the angle of the traction screw. The other end of the screw passes through, and the nut works against, the end of the pipe soldered to the bands encircling the teeth to be used in overcoming the resistance of the tooth being moved. Fig. 8 shows a cuspid being drawn backward. It will be seen that the movement, tipping, which is the ideal, is

thus gained, and though the pressure is exerted on one side of the tooth only, yet rotation is impossible, as it moves backward. It will also be seen that the resistance is complete, as the teeth used for this purpose cannot tip, but must be dragged forward bodily through the alveolus. The screw is snipt off from time to time as it emerges through the pipe and chafes the cheek, or the cheek may be protected by covering the end of the screw with a piece of warmed gutta-percha.

After the tooth has been moved backward the desired distance, it is retained there by the screw being kept in position, or it may be removed and a piece of the gold wire inserted in its place.

The movement of a tooth forward in line of the arch is accomplished in the same way, only selecting teeth from the opposite side to be used in overcoming the resistance of the teeth being moved.

The expansion of the arch is accomplished by placing a bar of

heaviest piano wire against the palatal side of the arch, one on each side. They are held in position by the ends in front passing through little pipes soldered to bands encircling the cuspids. The *posterior* ends are kept in position by the ends of the wire being bent sharply at right angles, and hooked into little pipes attached to bands encircling the last molars.

Thus it will be seen that two rigid bars of steel, one on each side, are held firmly in contact with the teeth. As shown in Fig. 10, pressure may be exerted by placing the screw first described directly across the arch. The opposite ends resting against the bars of steel; expansion is gained by tightening the nut on the screw.

A better method of applying pressure against these two bars is to bend a piece of heavy steel-wire to conform to the curve of the arch across from bar to bar. At the side near one end is filed a notch fitting neatly one of the bars which it is to rest against. The other end is beaten slightly flat and a hole drilled through at a point directly opposite the other bar on that side of the arch. Through this hole is placed the screw for pushing, as shown in Figs. 1 and 4. The screw should not be over  $\frac{1}{4}$  of an inch in length.

This appliance is now ready to place in position, as shown in Fig. 9. It is in position in Fig. 10.

Pressure is exerted by

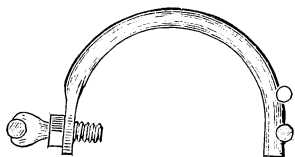


Fig. 9.

tightening the nut. After the nut has traveled the length of the screw, the bent wire is removed and straightened a little that the screw may have more action. It will be seen in the engraving that *two* of these screws and braces are used, one is to remain in position while the other is being straightened. Thus preventing the teeth from moving back, as would be if but one was used.

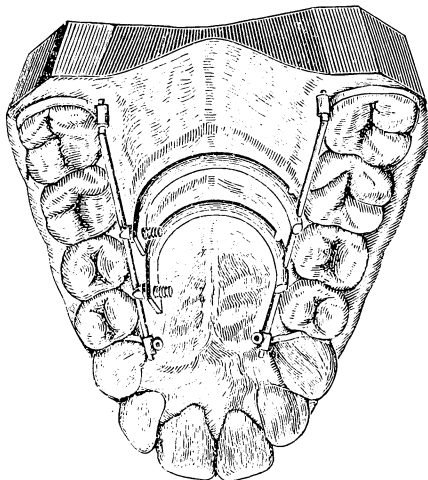


Fig. 10

These braces are moved along the bars forward or backward according as pressure is needed. After the sides of the arch have been prest apart the desired distance, they are retained by a straight bar

passing across the arch from cuspid to cuspid, the ends being bent sharply at right angles and hooked into little pipes, soldered at right angles to the pipes already described as attached to bands encircling cuspids.

The incisors are drawn into line by means of the lever and traction screw, this cross-bar serving as the wire of resistance for the traction screw to pull to.

This method of expansion may be applied to the lower arch as well, as little interference is offered to the movement of the tongue. If several teeth are to be retained in position, one molar on each side of the arch is banded and piped on a line parallel with their axis. Into this pipe is hooked the ends of a piece of the plated wire, bent to conform to the shape of the arch and snugly encircling it. To this wire is attached by bands and pipes such teeth as should be supported.

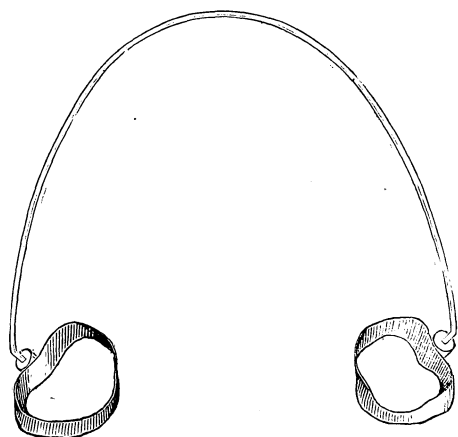


Fig. 11.

Fig. 11 shows such a retaining appliance.

Such is the general method of using these three appliances, but the different ways in which they may be applied are almost innumerable, each case requiring some slight modification.

The greatest care and accuracy should be observed in the construction, application and use of these appliances. The little tube

should be of gold and fit snugly the different parts of the appliances passing through them. The rubber dam should always be adjusted about the teeth before fitting and cementing the bands into position, and the cement used should be of the finest quality. The screws may be made of platinized gold, or if of steel they should be nickel-plated.

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STREATOR, ILL., Oct. 14, 1887.

*Editor Items* :—In the cases reported by Dr. J. R. Welch of hemorrhagic diathesis, please permit me to suggest *Lemonade* drinks of any of the muriatic acids, especially monatic acid. This is a good remedy to be used in cases known to bleed after extracting of teeth, say two or three days before extracting is done. C. R. TAYLOR.

NINTH INTERNATIONAL MEDICAL CONGRESS, DENTAL SECTION,  
WASHINGTON, D. C., SEPTEMBER, 1887.

(REPORTED BY "MRS. M. W. J.")

[CONTINUED FROM PAGE 486.]

*Tuesday, 3 P. M.*

The discussion of Dr. Brasseur's essay was opened by a written paper from Dr. C. A. Brackett, Chicago.

He thought that in proportion as the normally contained water of the dental tissues was eliminated it became less than normal tissue, and to that degree less capable of performing its normal functions, that of conveying sensations being one of the functions of dentine, the proper proportion of water in the dentine constituting the difference between a live tooth and a dried, dead, extracted tooth. He thought deliquescent carbohc acid and similar agents should not be applied to cavities approaching the living pulp, as they were liable to endanger it through capillary attraction. There were other septic agents that could be applied without any risk. The use of arsenious acid for sensitive dentine he considered absolutely unjustifiable. He was glad to see that the author of the paper recognized different pathological states of the pulp, though his views of pulp capping were not in accord with ours. He accorded great credit to the author for the apparatus invented for the application of hot air, but advised caution in its use in case of thin pulps.

Dr. Trueman (Philadelphia), said that though hot air would undoubtedly reduce the sensitiveness of dentine it was endangering the life of the pulps, by desiccation of the microscopic prolongations of the pulp which ramify through the dentine.

Dr. W. H. Morgan thought the language of the essay too broad, and the statements not exact enough. He did not see the advantage of thoroughly drying a structure that was to be immediately refilled with fluid antiseptics. The successful practice of the veterans of thirty and forty years ago, who certainly were successful in filling with gold before the days of rubber dam was sufficient, reply to the statement that absolute dryness was essential to a means in filling with gold. The author of the paper also made no exceptions as to the treatment of alveolar abscess, but he (Dr. Morgan) thought in the majority of cases where the cause was removed and putrefaction arrested, nature would effect a cure without any treatment.

Dr. Whitefield (Evansville, Ill.) found that sensitiveness of dentine was readily overcome by the rapid revolutions of a sharp bur. For bleaching teeth he liberates chlorine in the tubuli by the action of electricity on common salt placed in the cavity.

Dr. Guilford (Philadelphia) described an elaborate apparatus for



the compression of air, which is conveyed to the side of the chair in tubes, and can be used either hot or cold, as desired.

Dr. Brockway (Brooklyn) thought such apparatus cumbersome and unnecessary, the ordinary chip-syringe and alcohol-lamp flame furnishing all the hot air needed for the drying of cavities; though he had abandoned that practice because of the danger to the pulp spoken of by others, and used a sharply-cut bur, the friction of poor instruments causing the pain.

Dr. Brasseur's paper was passed, and Dr. J. Cravens (Indianapolis) read a paper entitled,

#### MANAGEMENT OF PULPLESS TEETH.

Dr. Cravens considered the injection of medicaments through the root-canal objectionable, as saturating the dentine and injurious to the pericemental membrane. A pulpless tooth is not dead, collateral nourishment being furnished by means of the vital connection between the cementum and the pericemental membrane. The apical space is a crypt of Egyptian darkness. If invaded by a bristle through the pulp-canal, light is let in to what becomes a battlefield for hobby-horses with their owners astride. The pericementum is confined between the cementum and the alveolar walls; there is no space for the accommodation of medicines injected through the canal. If forced in, inflammation is set up, the membrane is thickened, the root lifted in its socket, and the crown becomes painful in occlusion. An alveolar abscess is started and no benefit rendered the parts involved. If the apex is not open, medicines injected into the cavity are absorbed by the tubuli, carried through the cementum, and work down the sides of the root, reaching the pericementum, causing an irritating exudation either through a fistula or at the gingival margin of the gums; the pericementum is finally hypertrophied, its function interfered with, and the tooth is eventually cast off as a foreign body. The method, advocated by Dr. Cravens, requires that the apical end of the canal be closed as soon as it is free from pus, fluids, and obstructive matters; and these he removes entirely by mechanical means, without medicines, the latter being of no assistance. Broken-down pulp-tissue is to be removed by barbed broaches; gaseous contents and nephritic odors by displacement by means of a loose swab of absorbent cotton; the place vacated by the gases being filled with pure air to satisfy the vacuum. The apex can be closed and the canal filled with strips of No. 10 tinfoil carried singly and slowly in, so as not to clog or compress the air, and compacted by gentle manipulation. If pus is formed, it will force a fistulous opening and drain itself without canal-medication.

For deciduous teeth the treatment is the same. Use no medications, but fill the canal with phosphate of lime in the magnesia state. Absorption of the root will continue, and a fistula will surrender under this method in one or two days.

Dr. Fillebrown (Boston) read the opening paper in the discussion which followed. He said that while it was strictly true that cleanliness and dryness of the roots of pulpless teeth were the points to be attained, he could not admit medicines were always harmful. There were perhaps cases where non-interference might answer, but it was difficult to say what might have been and what nature would do. Great and uniform success was claimed by many, but then there were such different standards of success. He did not claim to succeed by closing the apex at first; he would not close till after the tooth was well. Where there was a chronic abscess discharging through the root canal, with no fistulous outlet, he would not risk closing the only outlet for discharge; it would be running the risk of pyemia. The "apical space" was to him a myth. The membrane was too closely adherent to both the root of the tooth and the cortical substance of the alveolar walls to admit of any space existing, unless excavated by art or created by disease. He thought the hyperthrophy and other consequences named were more frequently due to retained pulp tissue than to medicines. The treatment of deciduous teeth, advocated by Dr. Cravens, was not consistent, the phosphate of lime introduced being an antacid, and invaluable. What becomes of it when the roots are resorbed? His own method was, after cleansing the canal thoroughly, to pack it with cotton and sandarac as a test filling, and treat through the fistula.

Dr. Cravens' paper was criticized very severely. Dr. W. C. Barrett considered it of little significance; the pathology was more than singular, its etymology peculiar, its orthography *sui generis*. It was going back to the serious consideration of methods exploded twenty or thirty years ago, ignoring entirely all the late advances in pathological and microscopical science. It was not up to the requirements of the occasion, and should not be allowed to go forth from the International Medical Congress as voicing the views or the intelligence of the American dentist. The treatment of to day was entirely from the septic point of view. He was astonished that at this date a voice should be raised as in warning against affording an exit from the pulp canal of the septic debris gathered there. This was the first thing to be done in every case; give egress to the septic matter; then introduce disinfectants, and then antiseptics of bacteria destroyers.

Dr. A. W. Harlan (Chicago) said the paper read like a medieval romance. Instead of dealing with modern advances in antiseptic

surgery and bacteriology, the author of the paper would banish mephitic odors, and render roots laudable by mechanical means, forgetting that the whole tooth becomes saturated and polluted with foul gases from the decomposing pulp. He assumes that the object of "treatment" is to force escharotics into and beyond the apex when no fistula exists. Dr. Cravens' system as a system is unworthy our consideration. He was astonished that the committee had permitted the presentation of a method so obsolete, so unworthy our knowledge of microbial diseases.

Dr. W. H. Morgan said that papers were published in the journals of thirty years ago which advocated every therapeutic principle adopted to-day. We were told not to fill the roots of deciduous teeth with metal, because when the roots were absorbed the metal would be left; but this assumed the possibility of physiological action in a dead body. The structure might be broken down by chemical action, but there would be no absorption of the roots of pulpless deciduous teeth; the only remedy for them was extraction.

Dr. Butler (Cleveland, Ohio) thought the paper would not have been seriously presented as a *bona fide* system, but merely to excite discussion, and call out the other side. He hoped our friends from the other side of the Atlantic would view it in that light, and understand that in America there were still some intelligent live practitioners of dentistry. The results reached in the discussion would perhaps not have been brought out in another way. We should therefore view the paper charitably notwithstanding the sharp criticisms it had called forth.

Dr. Harding (Shrewsbury, Eng.) said that since he had been in America he had seen much to excite his admiration and wonder, but nothing had so much astonished him as the paper under discussion. In England dental practitioners were thoroughly imbued with the ideas promulgated by Prof. Lister. Pus and septic matters are the results of microscopic organisms, and the cure was reached and their formation prevented, through the use of antiseptics and germicides. To be told by the writer of the paper, that we can get rid of them by mechanical treatment, excited both interest and astonishment. He was glad to see that was not the prevalent opinion. When pus is formed from a dead pulp it is certain to infiltrate the tooth structure and be absorbed by the tubuli. You may fill the canal, but as long as the germs find pabulum to feed on they will be reproduced. The theory that germicides introduced into the canal will necessarily produce inflammation of the periosteum is absolutely unfounded. Where germs exist an exit must be provided; they must not be plugged up. When the last germ is divitalized, then the tooth can be filled with success.

Dr. Cunningham\* had hoped to have the privilege of laying before the section the statistics of over 500 cases treated by the immediate method, which might induce them to look more leniently on the essay of the afternoon. He had arrived too late to hear the paper, but he judged from the altogether one-sided nature of the discussion that it was quite possible after seeing his records, they might see the ideas of the essayist in a different light. Unfortunately his effects had not yet arrived, but he asked permission to produce them later.

At the request of Dr. Cunningham, Dr. Cravens postponed his final remarks till after the presentation of the papers named.

Dr. T. E. Weeks (Minneapolis) then read a paper entitled

#### **MATRICES AS ADJUNCTS IN FILLING TEETH.**

Dr. Weeks said that the styles of matrices in the market were as numerous as the children of the old woman who lived in a shoe, but they were all designed for a common purpose: that of converting compound cavities into simple ones having four walls. Illustrated by a series of charts, he described a large number of the patented matrices, showing that all depend on the application of a few principles, variously modified, made of flattened wire, strips, bands, circles, loops, etc., held in position by wedges, solder, shellac, springs, screws, bolts and nuts, the essential requisites being close adaptability to the tooth, applicability to the greatest number of cases, pliability sufficient to admit of filling flush to the margin of cavities, etc.

Dr. S. H. Guilford (Philadelphia), opening the discussion, said that the object of the matrix was to enable us to perform a difficult operation with less difficulty. Though it was quite generally admitted to be of great value as an adjunct, there were men who condemned it as useless and cumbersome, necessitating a surplus of material where it was difficult to trim it off, and forming a wall unlike the natural contour of the tooth. But with the aid of the matrix time is saved to both patient and operator, and fillings can be made with the minimum amount of gold.

The subject was not further discussed.

The opening paper, Wednesday morning, was a translation, read by the Secretary, of a paper from Dr. Pradère (Lyons, France) on

#### **THE CURE OF PHTHISIS BY THE CONTINUOUS APPLICATION OF MEDICAMENTS TO THE PALATE,**

by means of an apparatus called by the inventor a "permanent invisible dental inhaler." The appliance is to be worn in the roof of the mouth, like a dental plate, and contains absorbent cotton saturated with various medicaments, the "vapors" from which, when inhaled

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\* A foreign member. Address not given distinctly.—REPORTER.

by respiration or swallowed with the saliva, cause the death of the microbes or germs of various diseases.

By general consent the paper was referred to the section on Practical Medicine, the cure of phthisis not coming within the sphere of dental practice.

Dr. J. V. Metintz (Vienna, Austria) next read (partly in German and partly translated at sight) a paper on

#### OSTEO MYELITIS,

describing two cases of necrosis of the maxillaries, in both of which the patient died. Treatment not given.

Dr. M. L. Rhein advocated the free use of the bur for the removal of all infiltrated bone.

The next paper was on

#### ART IN DENTISTRY,

showing the wide field for artistic possibilities opened up in restorative dentistry, both operative and prothetic, the necessity for a careful study of the face of a patient, especially the muscles about the mouth, and the opportunities for artistic work offered in the arrangement of single teeth, gum sections affording no scope for originality.

Dr. John Allen (New York) opened the discussion of this paper. He spoke of the antiquity of dental operations, of the advances made in the present century through dental journals, colleges and associations, and the necessity for individual effort and the exercise of individual powers of conception.

The session of Wednesday afternoon was held in the National Theatre, which was darkened for the display of stereopticon illustrations and photo-micrographs, accompanying two papers, one entitled

#### THE ORIGIN OF THE DENTAL FIBRIL.

By Dr. R. R. Andrews (Cambridge, Mass.), and on

#### PROTECTIVE DENTINE OR DENTINE OF REPAIR,

By Dr. M. H. Fletcher (Cincinnati), and an exhibit of Photo-Micrographs by Dr. J. Howard Mummery (London, Eng.).

The slides of Dr. Andrews exhibited the growth of the tooth in all stages, from the first dipping down of the line of epithelium, through the growth of the papilla, the growth of the odontoblasts and fibril cells.—Dr. Andrews laying great stress on the elongated pear-shape of the fibril cells,—to the calcified tooth, with matured pulp.

Dr. Frank Abbott (New York) opened the discussion of this paper.

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On page 519, November ITEMS is an article entitled Killing Pulpless Teeth. It should read, *Killing Pulps of Teeth.*

## TREATMENT OF ALVEOLAR ABSCESS.

DR. GEORGE A. MAXFIELD IN VERMONT DENTAL SOCIETY.

First, all broken down and dead tissues must be removed; then the parts cleansed and made thoroughly aseptic; and then such remedies should be used as will incite a healthy action in the parts involved. An acute abscess will not require as much treatment as a chronic abscess, yet the cases are rare where even chronic cases require more than two treatments. In acute cases, if the tooth is not very tender, open at once into the pulp chamber, taking the precaution to have the drill constantly covered with an aseptic fluid—either a solution of iodoform or bichloride of mercury, one to one thousand, will be sufficient. If an upper tooth, and it is quite tender, apply a ligature to the neck and hold the ends in the hands, with considerable tension. This will relieve the pressure on the pericementum caused by the drill. If the foramen is closed, pass a small drill through it, so as to allow free exit of the discharges, first removing all debris from the chamber and canal. Then wash the canal thoroughly with peroxide of hydrogen; if possible, use a syringe and force this through the foramen. If the tooth is not too tender, the treatment may be continued and the root filled at that sitting.\*

The treatment† is as follows: Continue the use of the peroxide of hydrogen till the bubbling or effervescence ceases; then apply bichloride of mercury, say of a strength of one to one thousand, and force it through the foramen, dry out the canal and fit to it a cone of gutta-percha, trying it in the canal, and so cut that it will come a little short of the foramen. As soon as the cone is ready, apply a saturated solution of iodoform in extract of eucalyptol, pumping it well up into the canal and through the foramen; then pump a solution of gutta-percha into the canal, dip the cone into the same solution and press it home to the foramen. The remainder of the filling can be finished at any time. If the cleansing has been thoroughly done, the abscess will give no more trouble.

If the tooth is too sore to admit of an opening being made into the pulp chamber, make an opening from the outside through the gum to the apex of the root. This can be done almost painlessly, by the

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\* In these cases I always treat and fill at a single sitting, unless the tooth is too sore to permit the necessary manipulation.

† This treatment is practically the same as that first advocated by Dr. C. T. Stockwell in a paper read before this society last year. Of sixty-two cases which I have treated in this way the past year, the only failures—that is where the fistula had not healed within three weeks after the operation—were too old chronic cases, one an upper incisor of eight years' standing, the other a first lower molar of over six years.

use of cocaine before lancing the gum. A quicker method is to apply a little of the crystal carbolic acid to the gum, and with a lance cut well down to the bone, which must then be pierced with a small drill. Paint well the gums around the affected tooth with a mixture of equal parts of tincture aconite root, tincture iodine, and chloroform, which will relieve the pain. Dismiss the patient for twenty-four hours, when the soreness will have disappeared, and it can then be treated as I have indicated.

It is sometimes advisable to prescribe a saline cathartic; also bromide of potassium, say sixty grains in two doses on retiring for the night.

Take particular care to make the openings into the canals so large that free access to the canals will be secured.

For chronic alveolar abscess, first open the pulp chamber and canal, and thoroughly cleanse. If it is of long standing, there will undoubtedly be some necrosed bone in the apical cavity, which must be removed. Enlarge the fistulous opening, and with an engine bur cut out all the dead bone, wash the cavity, and then proceed as with an acute abscess, only, after applying the eucalyptol, pack the canal with cotton saturated with the same, and dismiss the patient for from four to seven days, when the same treatment may be renewed. If there is still considerable pus formed, treat it as before, and let it stand another week before filling.

The cases that require more extensive treatment than this are exceptional. For these, the treatment must vary according to the complication that presents. Occasionally, in acute abscesses, we must resort to constitutional as well as local treatment, and these must be met as the symptoms arise.—*Ind. Practitioner.*

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**Curing Blind Abscesses.**—Dr. McKellops, of St. Louis, says he recently saw a patient in Chicago who had been treated for blind abscess. The tooth had been often filled, and finally the alveolar process had been taken off to reach the disease, and the septum taken out. \$175 was charged for the operation; yet when he saw the patient sometime after, his face was immense. The question is still open; hard students are still at work on it. Men talk of their *successes*, but the abscessed roots that come to us for extraction, with their oxychloride, and gutta-percha, and wooden pegs, etc., all in place, (some even filled with cotton, and smelling very sweetly!), tell another story than that of success. We sometime think we had a success, when we learn afterward that our patient went to some one else and had the tooth taken out!

## PAIN IN DENTISTRY.

G. W. WHITEFIELD, M.D., D.D.S., EVANSTON, ILL.

Are we not as a profession to be censured for a large proportion of the pain inflicted on those who place themselves at our mercy?—those who endure the excruciating torture of having a sensitive cavity prepared with improperly formed and often dull burs, that are pressed so hard against the sensitive tissue that they grind or scrape where they should make clean positive cuts? In this age of improvements and progress, should we not turn our attention more to the mechanical construction of our instruments, and see that they are formed so as to produce the least pain in performing our work?

How many stop to think, when they put a bur in a hand piece, whether it is made so as to cut, not to grind out a cavity?—whether it will do the work with a minimum of pain, or, by grinding and friction, inflict pain that is almost unbearable? Burs should be cut for the kind of work they are to do; for instance, in cutting enamel the axes of the blades should be parallel to the axes of the enamel rods; while in the dentine the blades cut best as a knife would in cutting grass, with the end of the blade inclined to an angle; the blades should be ground so as to free themselves from the chip.

Also take into account the speed of your engine; the greater the speed used, the fewer blades should the bur have. The higher the rate of speed at which you can run the engine and have the burs cut and free themselves, the less pain to the patient, as the pain is intense in proportion to the friction, and the length of time taken to perform the work. The pain from the bur is largely caused by the heat produced, which is reduced by a rapidly revolving bur, if the blades of the bur are properly shaped.

A homely illustration of this fact can be given by holding a thin plate of steel on a grindstone, which is slowly revolved. If the stone is dry the metal will be heated according to the friction given it. Now take a plate and hold it against a rapidly revolving emery wheel. The heat produced by the motion in separating the minute chip, is carried off in the chip before it has time to be imparted to the mass. This is the case in using a rapidly revolving bur in dentine; the chip is separated by a quick, light touch, before it has time to communicate the heat produced to the bulk of the tooth.

This I will state as a fact, not as theory, as it is the result of my observations covering a period of years since I adopted the electric motor for my dental engine. At first it was a mystery to me why my patients complained so little about the pain produced by the electric engine.

—*Dental Review.*



## EXTRACTING.

DR. JARVIS, NEW YORK.

I do not suppose there is any other sight so beautiful to the eye of the dentist as thirty-two teeth in the jaws, each tooth in its normal position; but unfortunately it is a sight we rarely behold. We have to deal with mouths and with teeth as they are presented to us in practice, and the question presents itself, "What is the best to do in this particular case?" I do not think there is a dentist but would prefer that the thirty-two teeth shall be kept in the mouth, provided they can be retained without injury to the patient. But that injury may be of various kinds. Thirty-two teeth may possibly be kept in the position that nature seems to have assigned them, all strong and well developed, but presenting such an irregular and uncouth appearance as to be detractive to the personal appearance of the patient; and I think then it is perfectly proper to extract one or even four teeth. I believe twenty-eight teeth in regular and good position are better than thirty-two teeth presenting a crowded and unattractive appearance. Twenty-eight teeth moderately free from decay are much better than thirty-two teeth that are continually presenting cavities to be filled, and which are a source of suffering and expense to the patient. I think we are justified sometimes in extracting some of the teeth to secure a better arrangement and better preservation of the others. I have extracted one or another of every tooth in the mouth for regulating purposes; and I think I can present a case to Dr. Atkinson where he would say it was perfectly proper to extract a cuspid. I remember one case where on one side of the mouth the cuspid, the lateral, and the central were in perfect position; and on the other side the central, lateral, and then the bicuspid, the bicuspid presenting to the casual observer the perfect appearance of a cuspid tooth. At twenty-eight years of age the cuspid made its appearance in the roof of the mouth. I extracted it, and I think Dr. Atkinson would have done the same under the circumstances. I think his illumination in that case would have been just the same as mine was. I do not remember having extracted a cuspid that was outside of the arch.

In my own experience I have frequently found it judicious to extract bicuspids. Where the teeth are large, the jaw small, and there is a square, coarse look to the mouth, the extraction of a bicuspid on either side will allow the cuspids to drop in, and give a much more refined expression to the person. I think it is then much better to extract a bicuspid than a molar. In other mouths I think it is extremely unwise to extract the first bicuspid. I have two instances where the bicuspids have been extracted to relieve a crowded condition

of the teeth, and the condition in both is now very much worse than it was before the extraction. There has been a falling in, and apparently an absorption of the process to a great extent. I think where there is a tendency to a narrowing of the jaw the bicuspid should under no circumstances be extracted.—N. Y. Odon. So. in *Cosmos*.

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**Extracting.**—Dr. W. H. Atkinson says: We are following too much the orthodoxy of our elder sister,—general medicine; dealing in generalities; finding fault or commending without going deep enough into the subject to be entitled to judgment. What are the points now involved in this question that we ought to be masters of? It resolves itself into two questions: Will you have the original tissues that belong to the body preserved in good working condition, or are you well enough acquainted with the laws of the evolution of the different parts of the body to decide that you will be better off when you have scar-tissue in some part of the body than you would be with the original tissue? There has been a great effort to discover and describe the qualities of scar-tissue and all that, and it is the gist of the trend of mental activity in all departments of medicine to-day.

What is our duty? I say to my boys when I have them in class before me, “When you don’t know what to do, hold still and wait for developments; or if the case is of such urgency that you cannot dismiss it in that way, ask the best counsel that you can get.” What is nutrition of a part, and how is it brought about? When we understand these foundation principles we will be entitled to formulate short rules, so that a book of 150 pages will give us the cream of all we know about it. Then we can select a dozen real good, earnest dentists who will formulate a primer that shall stand forth as the guide of the world, and shall hold some relation to all the changes of the organism that constitute health and disease. In regard to the question of extracting, I think I have pronounced myself sufficiently plain on that for these many years. We ought to spend our time in asking questions, and then we should get at the real gist of our subjects. There are circumstances in which it becomes my duty to extract the sixth-year molars, though they are my pets. If I had charge of the patient from early childhood I do not think I would ever extract. I cannot conceive of so meanly begotten a child that its teeth could not be trained to obey the type.—N. Y. Odon. So. in *Cosmos*.

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Glycerine is preferable to oil and is indispensable in using chloro-percha for root fillings and for a coating on instruments while working in plastics.—Dr. G. A. Bowman.

## SMOOTH PLATES TO PREVENT RUBBER SORE MOUTHS.

DR. A. H. HILZIM.

(Read before the Southern Dental Association, August, 1887.)

There may be nothing new in the method I herein state, but I may force on you the importance of the method. The way to prevent sore mouth is to have the plate come from the vulcanizer polished. This method obviates the use of gold lining. There is nothing in nature so smooth as the mucous membrane of the oral cavity moistened with saliva.

Rubber plates vulcanized in contact with plaster cannot be smooth, and can only be made so at the expense of the fit of the plate, by brush wheels, sand paper, etc. When the fit is impaired there is a variable movement of the plate, and this in itself would irritate and inflame the parts. If left in its rough state the same result will follow, and in addition the rough surface will catch and hold filth, which is another cause of sore mouth. The whole trouble then comes from irritation of the mucous membrane.

To insure a smooth plate, secure a smooth and accurate impression by using the best plaster. Also use the very best plaster for models. Add the plaster to the water gradually, allowing the plaster time to absorb the water, thus avoiding bubbles. When sufficient to absorb all the water, stir the mass gently and pour, being careful to settle the the first well in the impression by jolting the cup. If wax or modeling compound has been used for the impression do not separate by moist heat as that has a tendency to soften the model. Trim the model of any irregularities, fill depressions and cover with No. 6 tin foil, this protects the model from abrasions while handling. Grind the teeth with good square joints, cover the joints outside with thin oxy-phosphate, and imbed.

When the flasks are separated, the No. 6 foil will adhere to the wax plate. Now cover the model with No. 20 tin foil—the No. 60 made for the purpose is too heavy and will mar the fit of the plate.\* Remove the wax from upper half of flask, not by hot water, but by pulling it away with instruments. Cover the joints inside with oxy-phosphate. Heat both halves of flask before packing; heat the rubber before packing over hot water and always measure the rubber in the gage, cover the lingual or female portion of model with a good coat of liquid silex. Depend on finishing the wax model as you wish the plate to appear, with blow pipe, and not have to scrape the plate.—*Southern Dental Journal*.

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\*Better use lead covered with tin; it is much softer and more pliable.—ED. ITEMS.

## ABSCESSED TEETH CAUSING DISEASED ANTRUM.

DR. J. P. WILSON.

Mrs. C., wife of a clergyman, came with her physician to consult me as to the possibility of diseased teeth causing the general debility and nasal catarrh from which she was suffering.

The catarrhal symptoms had existed about twelve years; recently her general health was being rapidly impaired and the catarrh greatly increased. Her breath was intolerably offensive, appetite gone; felt languid and despondent. I found the second left upper molar slightly discolored, but apparently in good condition; no sensitiveness on percussion, but the color of the tooth denoted a dead pulp. From a sense of heaviness in the left cheek, the catarrhal discharge from the left nostril, especially when lying on the right side, I diagnosed the case as one of disease of the antrum, the primary cause being found in the discolored tooth. I accordingly drilled into the pulp-chamber, and found it filled with putrescent matter, confirming my diagnosis. The lady living at a distance, I decided to extract the tooth, and was disappointed in not finding pus following its removal. A probe was readily passed into the antrum, and found the floor thickly covered with a cheesy-looking substance resembling dried pus. Taking a rubber bulb-syringe filled with warm water, I thoroughly washed the cavity, the fluid readily passing out of the nose, carrying with it large quantities of the purulent matter. I then used thoroughly a wash composed of a five per cent solution of carbolic acid, and ordered the treatment continued. After her return home my directions were faithfully carried out by her physician, who reports her rapid return to health. Two months after this operation the husband called to see me, and reported his wife as being in the best of health.

Mrs. R., widow, age 30, called to have a tooth filled. She was suffering from nasal catarrh of sixteen years' standing. The second bicuspid and third molar on left side above were slightly sensitive on percussion, with indications of dead pulp; space between them occupied by artificial teeth on rubber plate. She had been under treatment (medically) in Chicago, New York, and elsewhere, without benefit. Health of late years gradually failing. Breath exceedingly offensive. It had never been suggested to her that diseased teeth might possibly be the cause of her ill health, and she was loth to follow my advice.

Finally she consented; and, extracting the third molar, I opened into the antrum. An injection of hot water was followed by a gush of corruption from the nose. The treatment of this case continued for eight months, being injections of carbolic acid, sulphate of zinc, sulphate of hydrastic, peroxide of hydrogen being used at various

times. The discharge gradually subsided and her health materially improved, when she left for a distant city.

I should also state that the second bicuspid was afterwards extracted and found to be in the same state as the third molar; root much enlarged from excementosis, and the pulp dead. The crowns of both teeth were sound. The tediousness of the treatment was doubtless caused by necrosis of the spongy bones around the natural opening from the antrum into the middle meatus of the nose. These bones gradually softened; and, being disorganized, little by little were washed away. The septum of the nose was also perforated, throwing the two passages into one.

It will be remembered that the roots of the superior molars not unfrequently penetrate the maxillary sinus, leaving nothing but mucous membrane which lines that cavity to protect the apices of the roots. When an abscess forms under such circumstances, the discharge will always be into the antrum, and the alveolar dental membrane will frequently not suffer any serious disturbance, making diagnosis difficult in such cases.—*Cosmos*.

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**Thirty-two Teeth in the Mouth.**—Dr. Perry, New York, says: I want to take exception to the statement that it is very uncommon to see thirty-two teeth in the jaws. I cannot say that that is my experience. I think I can show a large number of mouths among patients whose teeth have been under my care since childhood which contain thirty-two teeth. Some have large fillings, and some have a great many of them, but many are without a dead pulp, and with all the thirty-two teeth in position. It has required a great deal of work on my part, and considerable expense to the fathers of the children; but by the time they have reached the age of twenty years the dangerous time has passed, the hard work has been done, and with reasonable care the teeth can be kept nearly all through life. It is during childhood that the foundation must be laid for these complete dentures. I think it would be well to call the attention of the younger members of the profession to one point, and that is that they should not be discouraged with the sixth-year molars at six, eight, ten, or twelve years of age, if they are soft and frail, or even considerably decayed; for, by constant watchfulness and filling and re-filling with plastics, the time will come when they will be in such an improved condition they may be permanently filled and preserved for many years. I learned that fact many years ago, from a case of a little girl whose sixth-year molars showed signs of rapid decay almost as soon as they came through the gum. I decided they should come out when the child should have arrived at the age of twelve or thirteen years; but I said I would do

the best I could with them in the meantime by filling them with gutta-percha and oxychloride,—that was before oxyphosphate was introduced. I did so, and carried them along till the child was eleven or twelve years of age, and by that time the condition of things had bettered so much that it came to be a question whether I should take the teeth out. Somebody has said, when you don't know what to do, don't do anything, and I acted on that principle in this case. As time went on, the teeth improved, and at thirteen I decided to leave them in, and to-day they are all in position, and the woman has a beautiful set of teeth, though there are some pretty large fillings in the sixth-year molars. She takes good care of her teeth, and comes to me regularly twice a year. Such cases seem to show that, though the sixth-year molars may be bad in the beginning, if they are kept along with plastics, nature will put them in a condition so that they can be worked on a little later with a reasonable certainty of success.—N. Y. Odon. So. in *Cosmos*.

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**Irregularities.**—I am emphatically against the idea that most cases of irregularity could be prevented by extraction. There is often a strong temptation to extract. It looks as though a little extraction would be a great benefit sometimes, for example, when the permanent tooth is coming down and a little irregularly, it seems as though the removal of a temporary tooth, one side, would remedy the whole difficulty. It is usually a misleading idea, because you do not look ahead. You are looking only at the immediate condition. You are robbing Peter to pay Paul, and Peter will come in for his pay with interest in time.

No person is competent to take hold of a case of irregularity who has not studied the entire relation of the temporary with the permanent sets of teeth; who does not have in his mind's eye clearly just what that relation is now and what it will be in the future, and what consequences are going to follow on his act, what changes are going to take place beside the one immediately contemplated. Most of these extractions are a mere temporary makeshift which works serious injury in after life. We ought always to bear in mind in looking at a temporary tooth what relation its successor bears to it, what relation it bears to its fellows, what relations its successors will bear to those which are to follow after; looking ahead, taking into consideration the age of the child, the relative positions of the tooth, the articulation, not only that which is, but which is to be. All those things must be considered before we take the responsibility of making an extraction either of a permanent or temporary tooth in these cases.

The alveolar process is created and exists for the express purpose

of covering in the teeth, taking care of their development and retention. When a tooth is drawn the alveolar process finds its vocation gone and it goes too. It is a mistake to suppose that you can extract a temporary tooth now, say a molar, at the age of five, which should remain four or five years longer, and expect the alveolar process there to remain for the accommodation of the permanent bicuspid. It won't do it. It shrinks. You will notice in every such case, if you look at it years afterward, that there has been a loss of substance, a non-development of the alveolar process, and there is not the space there to accommodate the permanent successor that there would be if the temporary tooth had been preserved.—*Ill. Transactions.*

**Filling Devitalized Teeth and Roots** is now considered the duty of every progressive dentist. These roots, as a rule, should never give trouble if thoroughly treated and perfectly filled. They should never get sore; should they do so, your work has not been perfectly done, and the sooner you correct your mistake, the better it will be for your patient. Roots carelessly treated and imperfectly filled are liable to result fatally to the tooth, and to the injury of the patient. The immediate filling of roots is in my opinion the best practice. Never allow yourself to say a root cavity is too small to fill or that you can not get into them. If there has been live pulp tissue anywhere, that space must be filled to the end of the fang, if you wish to avoid future annoyance. Periosteal inflammation caused by a filled tooth is an unnatural condition and should never be present. The use of "Herbst Pain Obtunder," is of great help in opening small canals, which were hard to find, specially such cases as we sometimes have in the molars. It appears to oil the deposit which seals the opening.—*R. R. Vaughn.*

**Pure Mercury.**—In making a dental amalgam, use always pure mercury, bought from a trustworthy dealer, who knows that the article is pure. The use of impure mercury must make a poor amalgam with the very best alloy that can be obtained. Keep the mercury constantly covered with alcohol, which should remain clear and the surface of the mercury appear brilliantly bright. Take a common glass drop-tube with bulb; compress the bulb; pass the glass nozzle through the alcohol into the mercury; release the pressure on the bulb, and the tube will fill with mercury, which may then be dropt into the hand or mortar in as small a quantity as is desired. By this method the mercury in the tube and bottle is kept from contact with the air, and will remain bright and clean to the last. If through neglect the mercury should become oxidized, wash it by shaking it in the bottle with alcohol renewed again and again till perfectly free from discoloration by the mercury.—*W. S. H. in Cosmos.*

## PRELIMINARY EDUCATION.

DR. J. N. CROUSE, CHICAGO.

Read before the American Dental Association.

It is an acknowledged law of psychology that thought is made clearer and more definite in the mind by every expression it gives produces in the outside world, be it in clay, wood, iron, or words. The very effort at expression brings concentration, and leads to sharper observation, which induces clearer thinking. In the kindergarten the child's faculty of investigation is trained to construction rather than destruction; his whims, caprices, and passions are taught to submit themselves to law,—self-imposed law; good-will toward other workers is inculcated; and all rejoice in the success of each finished piece of work. So beneficial has this system of training proved that manual training schools have sprung up in all the large cities, and the agitation in the school-world is the effort to change from mere book-knowledge to a training of the faculties, which bids fair to revolutionize the whole plan of education. Without perhaps realizing its educational benefit, our dental colleges have been carrying forward this double education of head and hand. This will account for their more rapid and thorough advancement than other professional schools. Think for a moment of the advantage it would have been to each of us if we could have had the training of a good kindergarten when a child, and the advantages of the manual training schools which we have to-day, before entering our profession. The advantages will be incalculable to the future dental student who has gone through in early childhood a good kindergarten, then through a primary or intermediate scientific course, and finally has taken the course in our best manual training school. This does not imply a neglect of purely intellectual training quite as full and complete as the college course prescribes. All the faculties are trained to think, developed by the head and hand working together; while the mere college graduate is taught to think by reading and studying the thoughts of others, without the added help of either physical development or practical experiment.—*Cosmos*.

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**Extracting a Cuspid.**—Dr. Dwinelle, of New York, says: The cuspid is one of the key-stones to the arch. The maxille are not perfect arches; they are sections of a parabola. The cuspids are the most important teeth in the mouth, not excepting the sixth-year molars. I remember to have extracted two cuspid teeth, several years ago, both of them tardy teeth, late in developing, and both in the superior maxilla of mouths where there had not been any teeth visible in twenty years; in one instance twenty-five years. Both the patients had worn artificial dentures. Both the cuspids lay in the palatine arch; and



nobody knew that they were there till the patient was presented to me. One case was brought to me by my worthy friend, Dr. Lord. The patient was Hon. Hiram Barney, then our collector of the port. He had been suffering from neuralgia; had exhausted the research and skill of all his medical friends, and nobody could divine what the trouble was. He was in great distress; had not slept for seven nights and days. He was nearly insane, and was evidently rapidly succumbing to the great strain on his nervous system. I looked into his mouth and discovered a prominence lying across the palatine arch, and on the instant I diagnosed that the whole trouble proceeded from a tardy tooth lying imbedded there. I told him my opinion, and got his faith and confidence. He wanted to know what course I would take. I told him I should dissect away the gum down to the bone; cut this away and make an opening in such a way that I could extract the tooth. I did this literally, and the operation gave him instant and permanent relief. That is an instance where I was justified in extracting a cuspid. I had another case, years before, of a very similar character. A lady had the credit of having cancer of the superior maxilla, which had been toothless for years. The cancer was a tardy cuspid tooth, undeveloped and deeply imbedded, which I extracted.

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**Treating Exposed Pulps.**—The tooth should be isolated by the rubber dam, and the cavity opened so as to give a good view of its interior. The debris and softened dentine should be carefully removed without impinging on the pulp, and without producing pain, if possible—and this is possible more frequently than many are aware.

The cavity should then be saturated with pure wood creosote, which should be allowed to remain a few moments to become absorbed, when the cavity should be carefully dried, and a drop of Fletcher's carbolyzed resin placed over the point of exposure and left for two or three minutes, when the excess should be dried off with bibulous paper; and then the whole surface of the cavity, which is to be covered with the capping material, should be varnished with copal dissolved in ether. When this has hardened, which will be in a few minutes, the capping, either of oxychloride or oxyphosphite of zinc, should be *flowed* over the point of exposure to the depth or thickness desired. The capping material should never be *forced* into place, for injury may and is almost certain to follow any compression of the pulp. When the capping is sufficiently hardened, the filling, either temporary or permanent, may be proceeded with. These instructions pre-suppose, of course, that the pulp is in a healthy condition.—*Dr. Geo. H. Cushing.*

## SAVING THE SIXTH YEAR MOLARS.

DR. A. L. NORTHROP, NEW YORK.

It is impossible under all circumstances to preserve thirty-two teeth in the mouth. The patient comes to the dentist as to a physician for advice and treatment, and it is for him to decide what is for the best interest of that patient. There are cases in which we extract sixth-year molars, and, when looked at years afterward, we have been led to say that if our foresight had been as good as our hindsight we would not have done so. I recollect a patient who came into my hands many years ago with large and frail teeth, much crowded, and it appeared to me impossible to retain those sixth-year molars without doing the patient positive injury, and I had them extracted. But from the day those teeth were extracted the arch expanded, and within four years there were spaces between all the teeth in the mouth. I do not think I ever extracted a sixth-year molar in any other case where I really regretted it afterward. I have extracted not alone the sixth-year molars, but other teeth, for regulating purposes; I have extracted a lower central incisor, the lower lateral incisor, the superior cuspid and the superior lateral, and I think I have done the patient good service in so doing. But I do not advocate the extracting of teeth indiscriminately, nor the laying down of any rule for their extraction.

We have every reason to believe that from this discussion we have arrived at a clearer understanding, but I think we shall be liable to err for a great while to come. Sometimes a patient comes with a first molar that is decayed and poorly organized, and it seems almost impossible to save it, while perhaps all the other teeth in the mouth are good. Another will come with one first molar pulpless, one with the pulp exposed, while the other two molars will perhaps be perfectly good. What are we to do in such cases? These are questions which we can only answer as they present themselves in practice. It appears to me impossible for anyone to lay down a rule which young men just coming into the practice of dentistry can follow with safety and feel that they have light enough to know when to extract and when not to extract. While I would not advocate the indiscriminate extraction of sixth-year molars, there are circumstances in which I would advise it. If I could preserve thirty-two teeth in the mouth I would be most happy to do it; but it is not always possible. One gentleman who has just left the room boasts of having thirty-two teeth in his mouth, and very well preserved. But I think there are few such cases. I have two or three patients that come to my mind now who have thirty-two teeth. One of them, a gentleman about fifty years of age, has been under my care for the last ten years, and all I have had the pleasure of

doing for him is to occasionally remove a little salivary calculus. He has not a tooth filled in his mouth.

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**All Cavities of Decay are not Equally Sensitive ;** nor is the sensation proportionate to the depth to which they penetrate the substance of the teeth, nor yet to the nearness with which they approach the dental pulp. This fact renders necessary a nice discrimination to diagnose between the near approach of a vital pulp and a condition which will frequently, during the preparation of a cavity, cause exquisite pain, hardly distinguishable by the patient from that caused by exposure of the pulp. This is known as sensitive dentine. The depth of the cavity, if but slight, or its position such that we may reasonably expect there exists considerable substance between it and the pulp-chamber, is quite suggestive, but not absolute proof that the central organ is not directly implicated. We must ever bear in mind the larger proportional size of the pulp in early life, the possibility of its occupying an abnormal position, and also that there may exist a prolongation of pulp-tissue extending toward the periphery of the tooth far beyond the usual boundaries of that organ. Besides, sensitiveness varies according to the character of the tooth. Great discrimination therefore must be used in determining the cause and treatment.—*Dr. Wm. H. Trueman.*

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**Educate the Children.**—I here venture the assertion that not one mother in a hundred knows how many deciduous teeth her babe will have ; and not one in five hundred can tell the difference between the temporary and the permanent or sixth-year molar. The little sufferers are presented to us by the score with the first molars decayed and broken down, with the remark that they have never shed those teeth yet. This is not as it should be. We must educate the *children* in this direction. We are well aware that there a number of small books published for distribution by dentists to their patients ; but this does not answer the purpose herein set forth. We should have a proper text-book, accepted by the school-boards throughout the State and taught in the schools. This destructive and far-reaching ignorance can be corrected in no other way ; and, till correction is furnished, it is the duty of each of us to disseminate all possible information in his immediate vicinity.—*Dr. W. T. Magill.*

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When men are rightly occupied, their amusement grows out of their work, as the color-petals out of a fruitful flower ;—when they are faithfully, helpful, and compassionate, all their emotions becomes steady, deep, perpetual, and vivifying to the soul as the normal pulse is to the body.—*Ruskin.*

## IMPLANTATION.

Dr. Younger says that during the last two years he has implanted between two hundred and twenty and two hundred and thirty teeth. He has had comparatively few failures, and in no case has he noticed any constitutional ill effects following the operation. He is a firm believer in the persistent vitality of the peridental membrane, and he is impressed with the belief from experience, in replanting and transplanting teeth, that success will not follow the operation unless this membrane is practically intact. The roots of all implanted teeth are now filled by him through an opening in the crown instead of from the apical end. Contrary to the practice of many physicians, he takes his own medicine, having had a bicuspid implanted seven months since in his own mouth. The tooth was extracted on his recent visit to New York, and the socket being deepened, he had another tooth planted therein just before starting for the West. It is doing well. The implanted tooth which was extracted has been placed in the hands of Dr. C. Heitzman for examination of the peridental membrane. Dr. Younger stated that there was considerable pain in the extraction of this tooth, which was no doubt a source of much pleasure to him. He is an enthusiast in this work, and not without reason, because, if a tooth will only last five years, it is safe to say that the operation will be of great benefit to many persons. This may become specially true if the practice of implanting roots for the support or attachment of bridges should be demanded. There are many cases where two molars and one cuspid or bicuspid is in place; now if a cuspid or bicuspid root can be implanted on the other side of the mouth, we have at once an additional support. Or suppose a molar is needed, *it* can be planted; in this way many disagreeable gaps can be filled for the support of bridges. With reference to the permanency of such implanted roots, when so utilized, time alone will determine. Dr. Younger certainly deserves credit for his boldness and persistency in performing this operation.—*Dental Review*.

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**"Cancer" caused by Diseased Teeth.**—Mr. H., æt. 25, in good health, called at my office with a friend. He informed me that he had given up a contemplated visit to his ranch in Texas on account of a malignant growth on his face. The trouble had been pronounced to be cancerous, and he had been advised to submit to a surgical operation as the only hope for his life. I found an irritable-looking tumor about the size of a hazel-nut immediately below the malar bone. There was no opening in it at the time; but he informed me that slight discharges took place occasionally. After using the lancet, a probe was readily passed through the soft tissues and the alveolar

processes to the apex of the roots of the first molar. After extracting them and using the carbolic-acid wash, I told him he need not hesitate in taking his trip, as—the cause being removed—a rapid cure would follow. He has since reported his entire recovery. In many obscure forms of trouble about the head, face and neck the teeth should be carefully inspected as the probable cause.—*Dr. J. P. Wilson.*

[This reminds us of our treatment of "a malignant tumor on the lower jaw" of a youth who was brought to us for treatment by his father, from forty miles distant, while we were practicing in Minnesota. His physician had sent word that the right side of the lower jaw must be laid bare, and perhaps a piece cut out to remove the tumor, but he had not the necessary surgical instruments with which to do it. We found a running sore on his neck which had discharged offensive pus for three years. On the young man taking the chair, we discovered an embedded abscessed root as the cause of the trouble. This we extracted and the lad pronounced well,—much to the surprise of both of them.—ED. ITEMS.]

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**Extracting an Aching Tooth.**—Dr. Henry Fisher says: Dr. Stellwagen, in an article in the *American System of Dentistry*, says an aching tooth should not be extracted; that many of the most troublesome cases of neuralgia follow the extraction of an aching tooth. He even goes so far as to state that the operation should be forbidden, when the nerve is transmitting painful sensations. This includes also teeth threatening to form alveolar abscess; such teeth should not be extracted, he says, till the limitation of pus formation has been reached. I do not believe the position taken by Dr. S. is a correct one. If I decide that the tooth or root can be of no service, and that the patient's teeth would be in better condition without it, I do not as a rule, hesitate to extract, whether it is or not aching; and I do not now recall a single instance where serious neuralgia followed the extraction; and in abscessing teeth it usually aborts the abscess and relieves the pain. It is true, the pain sometimes continues after the tooth is removed, but we have every reason to believe it would continue with greater severity and duration without extraction, while the majority of cases the pain soon ceases after the operation.

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**Deafness Cured by Treatment of Teeth.**—I had a case which I treated with carbolic acid in its pure form. It was the case of a man who had suffered from neuralgia till he had lost the hearing in both ears. He offered to submit to anything to gain relief. I probed into the antrum and found it very tender. I washed it with the carbolic acid and in five weeks from the time I commenced the treatment he was perfectly well. Simple treatment is all that is necessary; I think in such cases the simpler the better. I invariably use drainage tubes.—*Dr. A. J. Prosser.*

**Missionary Dentists.**—The favorable reception of missionaries of the Gospel among heathen nations has of late years been greatly promoted by sending as heralds regular graduates of medicine, who, by the exercise of their skill in the healing art, have won the confidence and esteem of most barbarous and blood-thirsty tribes. The practice of dentistry is likewise proving a means for peacefully introducing the missionary into the good graces of suffering savages, and in a recent tour of the island of Formosa it was a not infrequent preliminary to religious services for the missionary to extract fifty or more teeth. The radical relief of toothache, by simple and obvious means, may well excite heartfelt gratitude in the sufferer, and engender such confidence in the friendly disposition of the dentist that easy access will be gained for the faithful ministration of the Gospel teacher. The attention of the various missionary boards might be profitably directed to the obvious advantages of having more of their messengers qualified and equipt for the gratuitous practice of dental surgery among the heathen.—*H. in Cosmos.*

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**German Dental Education.**—There is one feature about dental education in the U. S. which cannot well be superseded by those in the same position in Germany. Here the people, from whatever reason, know more about dentistry, and they are willing to pay more for dental services. The result is they have a fee system on the other side which seems absurd. Whatever is done for the patient the fee is the same. This has been in a measure overcome by some American dentists, but the same mill-stone is around the necks of the great majority, and it will not be removed till the people are educated to a higher point. The great mass of the dentists there are in a low, degraded position compared with practitioners here. Here we have representatives from all over the land; if men have anything to demonstrate to their brethren they are given the opportunity to prove its worth. It is our desire to have our students in the colleges learn all they can from whatever source will help to make them better dentists.—*Frank Abbott.*

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**Our Nomenclature.**—Dr. Atkinson is right when he speaks of the differences in the meaning of terms. We do need a better nomenclature; but it is difficult to arrange a nomenclature that will describe the thing named, which it should do. Heretofore we have had difficulty in the nomenclature of microscopy, histology, and pathology. One person writes on pathology, and he purposely steers clear of the language used by others, avoiding the terms they employed; and this has multiplied till it is a large undertaking to reduce the whole to a common system.

## AFTER-PAIN FROM EXTRACTING WISDOM TEETH.

Editor ITEMS:

W. S. B., p. 458, Oct. ITEMS, says he has had trouble from the extraction of a wisdom tooth, in severe after-pains, and asks what the cause can be, and what can be done in such cases. Permit me to suggest a possible cause of the paroxysmal pains to which he refers.

In the extraction of the tooth the nerve branch stretched somewhat before it severed from the apex of the root, and that little end being drawn through the minute foramen in the alveolus did not resume its normal position, but *twisted or formed itself into a bulb*, thus keeping the branch stretched *from that point to the brain*.

I would recommend opening into the alveolus, well down to the inferior dental canal, reaming out with sharp burs all that portion of the alveolus occupied by the apex of the root.

Use a sat. sol. Tannin in Glycerine as a styptic and the wound will soon heal.

I operated successfully for a similar trouble in the fall of 1885, an account of which will be found in the January, 1886, No. of the *South-ern Dental Journal*, p. 487.

LOUIS P. DOTTERER, D.D.S.

Charleston, S. C.

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**Nasal Catarrh Caused by an Abscessed Tooth.**—A patient had been treated for nasal catarrh for some time, but without relief. By advice of her physician she consulted me about her teeth. On examination I found the right superior central dead; but with no cavity of decay. I opened from palatal surface; on removal of decomposed pulps I found a fistula was established extending from the apex upward into the nose, and discharging a very offensive pus. The treatment was very simple, using a weak solution of carbolic acid alternated with listerine, and in a short time the patient's *nasal catarrh* disappeared.—*Dr. C. B. Hewitt.*

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**Applying the Dam.**—On teeth not fully erupted, or where the form of the tooth makes the application of the dam with ordinary means difficult, string a couple or more of small beads on a ligature, securing each at a point which will bring a bead on the lingual and another on the buccal surface of the tooth; when tied around it, pass the dam over these beads, which will securely hold it in place.

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—“Have you seen my beautiful yacht?” “Have I seen your beautiful whacht?” “Beautiful yacht.” “Oh, no. I have nacht.” “If it's nacht too hacht, let's tracht down to the spacht where I keep my yacht.” “I wacht that you have nacht gacht a yacht. Great Scacht! I know your placht. You ought to be shacht. I'll not stir one jacht.”—*Exchange.*

### HUMBUGS AND NOVELTIES NEVER CEASE.

It is stated that one of these Parasites of a fungus growth (in this case said to be a Jersey man), which attach themselves to respectable professions, has *caught on* to Dentistry and Barnum's Circus, having made a contract with the "Great Showman" to look after and preserve the teeth of the herd of elephants, ostriches, orangoutangs and mummies. Traveling around on the *tail end* of the "Show," his wagon placarded with bills and posters, he draws attention to and solicits trade for his city offices, firm of "We, Us & Co."

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**The University of Pennsylvania** is the first of State institutions to forbid the use of tobacco to its students. Dr. White, sustained by the faculty, in his order prohibiting its use, says that observation has taught him that tobacco not only does no good, and is a useless waste of money, but that it interferes with the habit of study of students, and is positively injurious to their health.—*Zion's Herald*.

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**Filling Root Canals.**—Dr. J. C. Story, Dallas, Texas, cleans out root canals and fills them as much as possible, but he does not fill them all. He uses oxychloride of zinc every time, and does not know that he has lost one. He uses iodoform because it outstinks all the odors of the tooth. He also uses oil of cloves and carbolic acid. If there is a blind abscess he *brings it to sight* by drilling through the alveolar process, and fills at once.

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**Dr. Crouse's Paper on Primary Education.**—Its purpose is evidently misunderstood, and it will be better appreciated when we all know the value of manual training to the young. I have been chairman of a committee of a board of education which has under its charge a manual training school, and no severer punishment could be inflicted on one of the pupils than to deprive him of his lesson in carpenter-work or free-hand drawing. I think the time is fast coming when this kind of teaching will be universally recognized as one of the most important accessories in training the young.—*C. N. Peirce*.

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**Dr. Wolfred Nelson**, of New York, who has just returned from Germany, says he was assured by physicians and other gentlemen who had trustworthy sources of information, that the condition of the Crown Prince Frederick is unquestionably precarious. It is admitted now that he is suffering from cancer of the throat, known as tobacco smoker's cancer. The case is very similar to that of General Grant. The severe caustics used have destroyed not only the tissue primarily affected, but the parts themselves.



## CHANGES IN OUR OPINIONS.

Let the reader be assured of this, that unless important changes are occurring in his opinions continually, all his life long, not one of those opinions can be on any questionable subject true. All true opinions are living, and show their life by being capable of nourishment; therefore, of change. But their change is that of a tree,—not of a cloud.—RUSKIN.

**Killing a Nerve.**—Dr. Winkler says that till it is tried, it is impossible to believe how entirely satisfactory the driving in of a wooden wedge to kill a nerve is to both patient and operator, and how little sign of feeling is evinced by the patient. The dentist should not forget that there is much more for him to do; there are still multitudes on multitudes who need education from the dentist. The distribution of small pamphlets relating to the care of the mouth and the teeth has resulted in much benefit to the reading class.—*Dr. Louis Ottofy.*

**Mellott's Fusible Metal**, used for swaging caps, is very nice for swaging the cusps for crowns; but it seems impossible to swage a piece of gold the whole length of any tooth without breaking off the tooth from the die if made with the metal that is sold in the Mellott package; so I add one-twentieth part of tin to the block, to be used for the male part of the die that is cast first, then lute well with prepared chalk to prevent the union of the two parts when pouring the other part of the cast, and you will add strength to the cast, and it will be sufficiently hard to swage coin gold for crown work.—*DR. J. A. ROBINSON.*

**Implantation.**—While on a recent trip to California we had the pleasure of being the guest of Dr. Younger, of San Francisco. His work in implantation is too well known for us to comment on it. Suffice it to say that the cases we saw while in San Francisco would defy detection; and we deem that operation a *success* which gives to the patient even a few years of comfort, and which hopes for much more.—*Dr. C. L. Hungerford.*

**The Meharry College.**—A notable event which took place October 8th, 1886, was the opening of a Dental Department in Meharry Medical College, Central Tennessee University, for the dental education of colored persons. When we pause to consider that one-tenth of our national population is of the African or negro race, it is but just and Christian that this class should be represented professionally by men from among their own people. It is the popular belief with the majority that negroes have white, pearly teeth. It is, nevertheless, a lamentable fact that such is not the case. As a class, as far as my experience goes, they suffer with caries to the same extent as people of other races.—*Dr. W. T. Magill.*

## THE INTERNATIONAL TOOTH CROWN COMPANY.

*Its legal status—All the patents declared void, except the Low Patent; and for the dentist to infringe this—"the bridge must be made permanent by cemented bands or caps, without dependence on the gum."*

DEAR SIR:—In answer to your request, on behalf of first District Dental Society of New York, asking for our opinion as to the legal position of the dental profession, with regard to the crown and bridge patents of the "International Tooth Crown Company," in view of the recent decision of Judges Wallace and Shipman, in the Richmond and Gaylord suits, and advice as to relief from further claims made under the Low bridge patent, we have to say:

These suits involved the validity of the two patents to Cassius M. Richmond, Nos. 277,941 and 277,943, for "Tooth Crowns, etc.," the patent to Alvan S. Richmond, No. 277,933, for "bridge," all dated May 22d, 1883, and the patent to James E. Low, for "method of supporting artificial teeth by bands cemented to permanent teeth," No. 238,940, dated March 15th, 1881.

The first two patents covered what is known as the "Richmond" and the "Sheffield" tooth crown in all its varieties. They were held invalid, and, therefore, you are at liberty to make such tooth crowns without being in any way liable to the International Tooth Crown Company.

The complainants have appealed this case to the United States Supreme Court, but we do not advise you that any different decision will probably result. The practical result is that the tooth crown is free.

The patent for the Richmond bridge was also held invalid, but the Low patent was declared to be good. This Low patent covers a bridge attached to continuous bands cemented to adjoining permanent teeth, "whereby said artificial teeth are supported by said permanent teeth without dependence on the gum beneath."

The Richmond patent is, as you will remember, for a bridge supported by caps, and the Court held that it was not invention for Richmond to support a bridge on caps, but it was invention for Low to support a bridge on bands, taking all the surrounding circumstances into consideration, and that as a cap was nothing but a band with a roof on it, the Richmond bridge infringed the Low patent.

The practical effect of this decision, if the complainant chooses to follow it up diligently, and unless some new evidence is found, will be to shut the profession out from inserting permanent bridges supported at one or more points by cemented caps or bands without dependence on the gum.

As the matter now stands, any dentist inserting a Richmond bridge (according to the decision) infringes the Low patent; and an injunction would now be granted by any Federal judge on application, on the strength of that adjudication alone.

An appeal can be taken by the defendants to the Supreme Court, a year or so hence, after an accounting by them, and determining the amount of profits or damages the complainant is entitled to recover.

The way of relief is for all the dentists of the United States, who supported artificial teeth on a band or bar, surrounding and extending between permanent teeth, prior to September, 1878, to send to us, at No. 833 Broadway, New York City, or to No. 9, Law Chambers, New Haven, Connecticut, a truthful description of what he did, and for whom, and where and when.

If such proofs can be made strong and clear enough to satisfy the court that what Low described was well known, and had been long practiced by dentists in the United States before Low claims to have done it, the present case might be opened for rehearing on the newly discovered evidence, or the courts might refuse to grant injunctions, on the ground that the present decision would have been the other way if this evidence had been before it. At any rate, the question of the validity of the Low patent would be re-tried, if its owner ever had the temerity to sue a dentist whose mouth had not been closed by a license, in which he covenanted never to deny its validity.

Whether, in a suit against such a licensee, the court would enjoin on the *covenants*, under a patent declared void, either before or after the taking of the license, we cannot say.

SOLOMON J. GORDON, 833 Broadway, New York City.  
JOHN K. BEECH, 9 Law Chambers, New Haven, Conn.

## For Our Patients.

### THE INCONSISTENCIES OF OUR SPELLING.

In our November ITEMS, we had a little poem on this subject, citing the word "yacht," as a sample. The fact is, there are only a few words spelt as pronounced, compared with the many that are spelt with the most foolish inconsistency. It is well therefore, now and then, to call attention to this, so that, if possible, to arouse as many as possible to the desirability and possibility for reform. Many persons are so wedded to these absurdities *because they are old*, that *any* expose will be read with only a smile, as the effort of a crank; But we are in hopes a few will be awakened to indignation, and do all they can to free our language from the incubus of its present spelling. "Yacht" is absurd enough; but there are many other combinations of letters we call spelling, which are quite as absurd. Take for instance :—

#### "OUGH."

Of necessity spelling is lame. Twenty-six letters  
For our forty-three sounds are tyrannical fetters  
In expressing our words. But worse folly,—the use  
We are putting them to is a greater abuse.  
There's no sense in the way we throw letters together;  
A mere child could contrive to do better; or rather  
The most ignorant spell with more sense than the learned,  
And to sense, the unlearned are more easily turned.

As an instance take "ough"? This spells *ö* in our "ought";  
And yet wought a moughck lought we have gought if we tought  
This queer "ough" into all words with *ö*! But worse still,  
We may turn it almost to whatever we will.  
We have wrought it in ought. Then wought is it in dough?  
Ough, its *ö*. Sough we gough soughing "oughs," just as though  
We could through in our roughs letters sough they would grough  
Into sense? But still worse: "ough" was *ö*, then 'twas *ö*,  
Now 'tis *uf* in "enough" sloughy stough to make rough  
Spelling sougher soughcient; and yet grouggy blough  
Houghy "ough" is "at home" in a horse' tough "hough."  
So *this* "ough" is a *hok* found in houghed boughy stough  
And 'tis "lough, inclosed bay" where the hough on the rough  
Is found houghing and roughing in one laughing fough.  
Nough this "ough" we alough in a *bough* pronounhnced *bou*.  
But endough it with pougher to live in oughr vough  
And they houghe a groughl that it croughds ought a voughl,  
And ask how it would look in a cough or a foughl!  
And nough "ough" is an oo, as in "through." It is trough,  
If it groug in all words in the lough of this oo,  
We should rough it, and bid it adough. But look here?  
This queer "ough" has just turned to an *off*—Without fear,  
It seems bound to surprise us. In "cough" and in "trough"  
It doughs *off* for an "ough," and seems lought to take ough  
These superfluous letters. But Oh! what comes next?

See how children are vexed, hindered, wronged and perplexed!  
 Look at "hiccough," and such words, where "ough" spells us *up*!  
 As though *pough* spelt a *pup* and a *cough* spelt us *cup*!

What ridiculous nonsense for "ough" to spell *ö*,  
*Ö*, *uf*, *ok*, *ou*, *oo*, *off*, and then *up*!—A vile law  
 To make sensible men wish a change in our spelling.  
 But just when, and by whom, it will be, there's no telling;  
 For a change of a single absurdity, frights  
 Nearly all our conservative lords.

T. B. W.

## THE LIQUOR BUSINESS.

PETROLEUM V. NASBY.

The loss to the country in the amount of money actually paid for intoxicants, and consequently worse than lost, is the least of the evils resulting from it, and consequently the least important reason for prohibition. A far more important reason is the infernal part it plays in politics. In Toledo, with 90,000 population, there are 800 whiskey and beer shops. The vote of the city is 15 000. Now these shops will average two votes each, the proprietor and one assistant, which makes a total of 1,600. This is a tremendous power, especially as it is wielded by one head. All these men belong to the Liquor Dealers' Association, and all act together. These men have no principles. They are not divided on tariff, currency, and other questions; politics is a part of their business, and their vote is cast as one, that it may be profitable. They are in a business that everybody looks on as disreputable; they are in it to make money, and they care not how they make it.

In party contests this power has two points to make: First, to demonstrate that it is a power which is not to be meddled with. No matter whether the candidate aims at the presidency, a seat in Congress, school directorship, or a park commissionership, the first question the Liquor Dealers' Association asks, Is he a temperance man? If he is, the whole power of the organization is turned against him. They want it understood that no one can be elected to any place of honor or profit without their help. The showing of this power insures them against such troublesome interference as the enactment of early-closing laws, Sunday closing, large taxation, and, above all, prohibition. They aim at control of the law-making power, as well as the law-executing power. Secondly, they want their places to be made the centre of the political management, the places where committees meet, and from whence money used in the elections is to be dispensed. From this money they take their toll, as a matter of course. The point with the brewer is to make the brewery the one controlling element in politics, and he has succeeded wonderfully. A politician may safely snub the

church, but he grovels in the dust before the wielder of the beer mallet. He pays no attention to the good classes, but how he bows to the worst! The reason is, the good classes are easily controlled on this question and divided on political and economic questions, while the liquor interest is united solely for one end.

Once more, as to their strength: add to this vote (which is of itself enough to turn the scale as parties are now organized) the collateral branches of trade variably connected with liquor making and selling—the tobacconists, the coopers, the bottlers, and the different kinds of people who supply the saloon trade, are all under this influence, and half as many more can be added to this 1,600, making it 2,400 in Toledo alone.

But this, large as it is, is the least of it. There is not one of these eight hundred saloons that cannot control four votes besides the two behind the bar, and that comes very close to a full half of all the votes in the city. They control the poor devils who are glad to sell their votes for the beer they can drink, a week or two before an election, and one day after.

Now, take this enormous vote; mass the men employed in breweries, the wholesalers and retailers of liquor, the bar-tenders and other assistants directly employed, the collateral branches of trade variably dependent on them, and the vast army of hangers-on of the saloons, and it is a power which can and does control the cities of the country. Parties vie with each other in bidding for the saloon vote, nominations are made with reference to it, and this unholy power would become the government but for the counteracting influence in the country, which is yet, to some extent, free from its infernal influence.

Think of a government under control of an organization whose business it is to make criminals and paupers! Think of a government controlled by the worst, instead of the best, citizens! Think of communities governed by the men whose business it is to make thieves and paupers instead of honest and self-supporting citizens!

The influence of rum in politics is one of the strongest reasons for prohibition.—*North American Review*.

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**Irregularities of the Teeth** have become easy of treatment to what they used to be. No dentist dreads them now, provided he can get pay for the time. It is strange how simple a very complicated case becomes when the proper course is taken at the outset. Mellotte's moulding compound and the piano wire are great aids to getting good results with the least amount of work.—*R. R. Vaughn*.

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We think the **ITEMS OF INTEREST** is, by all odds, the best dental journal published.

HILTON & HILTON.

Ft. Atkinson, Wis.

## Editorial.

### WHAT ARE THE DISTINGUISHING CHARACTERISTICS OF ANIMAL ORGANIZATION?

Perhaps the most apparently essential characteristic is, that all animal life must be *organic*,—that life necessarily presupposes specific organs of life, centers of particular activities for the special purposes of the body, and that this is the reason they are called organisms. Yet this would be an imperfect answer; for vegetables have organs and life, though they are not known as organisms. For another reason it would be an imperfect answer: though organic things are always living substances, all living substances do not have specific organs. There are many living things, vegetable and animal, in which scientists cannot discover organs; their structure is simply protoplasmic,—a primary nucleus of living substance; a granular, jelly-like substance remaining unchanged through their lifetime, and perhaps through the lifetime of the body of which they may form a part. Yet, for the sake of classification, which in both organic and inorganic things can never be exact, we may call all living things organisms.

What are the essential characteristics of animal organization? How may we distinguish them from things inorganic?

1st. *There is an essential difference in the formation of their molecules, and in the increase of these molecules.* In inorganic substances the formation of molecules from atoms is by *affinity*, and the increase of the body is from *without*; the growth of organic things is from within, and comes from *an inherent energy*.

2d. *The characteristics of its protoplasms* is another distinguishing feature of animal organization. The origin of both animal and vegetable bodies is protoplasmic; but there is this peculiar difference between those of vegetables and animals, both in their course of existence and in their activities throughout the history of the body: In vegetables they remain distinct during the body's increase and maturity, but in animals they become variously modified into the distinctive organic structures of the body.

3d. *An animal is also distinguished by its mode of growth.* It assimilates to its own nature that which it absorbs, while inorganic bodies accumulate in size by accretion through gravitation and electrical and chemical attraction. How, in organic bodies, the crude substances received from without become refined and otherwise prepared for the wants of the various parts, and how they are converted into the very substances of which each organ and tissue is composed, and in the exact proportions needed, is mysterious; yet this is a peculiar feature

of animal growth. If we must speak of all combinations of elements to form substances, and of atoms to form molecules, and of molecules to form protoplasms, and of protoplasms to form organs, and of organs to form bodies,—as chemical, then, of course, organic development is by chemical affinity. But well has Prof. Yeo said: “To explain the mode of activity of living beings, and to grasp the exact relation borne by their living phenomena to the laws which govern them, is a task of enormous difficulty. Indeed, the manifestations of certain energies in living organisms are so complicated that it is often, if not generally, impossible to say exactly how they are brought about, and therefore we are obliged, for the present at least, to be satisfied with the mere recognition and description of the phenomena.” Yet, as a popular term, we may say of the various changes and combinations by which we recognize growth, that it is largely caused by those affinities and repulsions called electrical and chemical. But right here we are met with this strange fact (if affinity is the cause of growth), that, of the sixty-three elements in inorganic substances, only four enter to any considerable extent into the composition of animal substance. There are traces of ten others, but these four—carbon, oxygen, hydrogen and nitrogen—constitute 97 per cent, while the ten others make but 3 per cent. And besides, these ten are so uncertain in their presence, and so minute when found, as not to be considered essential; while the constancy, permanence and importance of three of those four mentioned—carbon, oxygen and hydrogen—constitute the main elements of animal tissues. The nitrogen is more of a diluter of the others than an essential ingredient or supporter of the tissues; and, in an important sense, is an element of disorganization and disintegration, than of life and growth. Therefore, whatever name we give to the essential organizing force, the peculiar fact of this trinity of elements being sufficient to bring it about, constitutes a unique feature of animal life.

4th. *In animal substances there is much more complexity, irregularity and instability* in the composition of atoms to form molecules, and of these to form molecular protoplasms, than in inorganic substances, or even in vegetable growths. This, at first thought, may seem like a strange assertion in view of animals being made of such few elements, and also in view of our common observation that, of all nature, there are no other phenomena so beautiful, symmetrical, and precise as animal organization, retaining their genera, and even their species from generation to generation, and, when once in being, defying so many forces within and without to destroy its integrity. But when we speak of complexity, irregularity, and instability, we do not mean confusion, uncertainty, and indefiniteness. There are few

changes in inorganic bodies, because their normal condition is inertia; and, even in the vegetable kingdom, growth is comparatively simple and functions are few. But in animal organization there is constant necessity for modification to produce the formation, growth, and maturity of a large number of organs and tissues, all combining to make one harmonious, efficient, and durable whole, adapted to an almost infinite number of uses, and where formation is offset by disintegration, growth by destruction, maturity by decay, yet *death by reproduction*. It is essential therefore that changes shall be constant, varied, and antagonistic, and that there shall be combinations comprising and producing all phases of results, giving life everywhere, yet causing death that life may continue.

5th. *The constant and varied combinations of carbon, and the continual changes resulting*, is another peculiarity of animal organization. In organic substances carbon is chiefly known in its combination in two proportions with oxygen to form carbonic acid gas, but in animals it combines also with hydrogen and nitrogen, and in such varied proportions with the three, and producing such various products and results, that the whole range of animal phenomena are sometimes called *the carbon compounds*.

6th. *The constant necessity of both disintegration and reintegration* going on in the animal economy constitutes another unique feature. A tissue can be said to live only as these antagonistic changes are taking place; for, of course, as waste occurs, new material must be digested, —waste being constant, for there is not a motion within or an action without that does not produce waste. This peculiar power and process of appropriation to offset this waste is called *assimilation*. Inorganic substances decompose without this power to produce repair and growth. Assimilation, therefore, is a distinguishing feature of animal bodies; for as every functional activity produces waste, there must be a constant supply of new material, exactly corresponding to that which is lost.

7th. *All organized bodies have life*. Though this life varies according to the designs and destiny of each entity, yet each has life peculiar to organized bodies, which inorganized bodies do not possess in any degree or modification. This we know is a knotty question. So uncertain, indefinite, and contradictory is the dividing line between that which is and that which is not life, *as seen by man's limited means for observation and investigation*, that many make it seem still more mystified to the student by theories and conjectures which would blot out all idea of an independent, inherent, vital principle. But can we give to these peculiar manifestations in organized structures any better term than *the energy of vitality*?—the result of a life co-existent with the body, and, therefore, without which the body dissolves? Whatever we call it, it is a



majestic, vivifying, all-controlling power not found in inorganic bodies. And if this is true of all organic things, how emphatically is it true of animate things. There is certainly a something very different and very superior to that which inheres in inanimate nature; and a something which irresistably transforms the inert to the active, the inanimate to the animate, the dead to entities of life,—that makes a marvelous difference in the material touched by its inspiring wand. It is a commanding energy, causing the very elements so to take forms and powers adapted to specific purposes,—so diverse from simple affinity,—that it must be a superior force. No one who studies anatomy and physiological phenomena, unbiased, can see its wonderful variety, completeness, and powers, and the precise adaptation of structure to purpose, without being convinced there is a power manifested above the chemical. It has an origin, growth, and design more than the “juxtaposition of particles,” by which we are asked to assume that these particles combine, *because* of their position; that they act, *because* they combine; that they mature, producing a perfected body, capable of transmitting their kind, *because* they act. No, no. This transcendent power is within every organized body,—placed there by its allwise Maker, so that each within itself produces “seed after its kind.”

Thus the transcendent distinguishing characteristic of animal organization is life. Great is the marvellous property of this life by which from three elements are made specks of molecules of such variety and subtle affinities; and by which these molecules are wrought, as by a wondrous genii, into primary entities of such centers of life called protoplasms; and by which these protoplasms of such mysterious properties, capacities and activities, and powers of procreation, are strung as so many beads to make threads of tissue; and by which these tiny threads of tissues are made into such wondrous fibers,—bundled or twisted, knotted or straight, wound or spread out,—so as to produce the multi-form phases of matrix of bones or substance of organs, strength of muscles or binding of membrane; and by which, through all these are sent telegraph wires and tubes of circulation; all making a body complete and harmonious, solid and strong, intelligent and enduring. Truly, “we are fearfully and wonderfully made.”

All this is too great to be ascribed to anything but a distinct, specific, inherent, all-pervading life; a life coming from an omnipotent author of all life.

As one of the improvements of the ITEMS for 1888, we shall have a full page likeness of one of the editors of our dental journal in each number. We think our readers will bear us out in saying that the ITEMS has improved in every respect each year of its existence. *We are doing our best*, and, of course, this means improvement.

### SOME CURIOUS FACTS IN THE ALLOYING OF METALS.

Gold is difficult to melt, copper is still more difficult, but the two together melt much easier than either alone.

Our silver coin is nine parts silver and one part copper, which melts easier than either copper or silver, and is much harder than either.

Lead and tin are both soft; melt them together and we have a hard alloy.

Tin and copper are both malleable, but one-tenth tin melted with copper gives us a beautiful non-malleable compound; add the 200th part of one per cent of phosphorus, though soft and wax-like and exceedingly combustible, and we have the celebrated phosphor-bronze, tougher than the toughest steel, with a most remarkable tensile property. Tin and copper is each soft, but melt one part tin with two parts copper, and we have a metal as hard as steel and as brittle as glass.

Iridium is harder than the hardest steel. It can be drilled only with a diamond, and is fusible only with the oxyhydrogen blowpipe, yet add but a minute quantity of phosphorus, and it is melted as easily as cast iron.

Copper melts at 1996 F., silver at 1873 F., zinc at 773 F., yet two parts copper and one part zinc will not melt as easily as when silver is added.

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**Giving Credit.**—Dr. Catching, of the *Southern Dental Journal*, complains that we quoted in our October ITEMS an original article from his journal of a half page length without giving his journal credit, as well as giving credit to the author of the production.

It would have been fairer (for these were the facts) for Dr. Catching to have complained that we had made an extract of *less* than a half page from remarks made by Dr. Morgan in a dental convention, reported in the *Southern Journal*, without giving credit for these remarks as an original article for the *Southern Journal*.

When quoting short extracts from conventional debates found in different journals we do not think it necessary to give credit to the reporter, but we invariably do to the author of the remarks.

Dr. Catching also complains we have quoted an article from the *New Orleans Medical Journal* without giving that journal credit. We do not remember to have ever seen such a journal. We certainly have not quoted an article from it, nor one we had reason to believe was original to that journal. We received an article from New Orleans which may have appeared in that journal; if so, it is only a case where this New Orleans journal and our own have received the same article. In the June number of the *Southern Dental Journal*, is an article printed as original, which we received, word for word in manuscript

from the author ; there is another in the July *Southern Dental Journal*. And this reminds us that it is not infrequent for an article to be sent to two or more journals for publication.

### MANUAL TRAINING.

Dr. Crouse's article,—Preliminary Education, spoken of in September ITEMS, as criticised by a learned brother as too "rudimental" to be read before so scientific a body as the *American Dental Association*,—will be found on another page. It is worth the perusal of every reader. The thoughts presented are just the thoughts that should be in the mind of all parents when deciding the kind of training their children need.

These kindergarten schools, and the technic schools which are their legitimate outgrowth, are revolutionizing the character and methods of education, and should revolutionize our workshops, and make more useful the thousands who are not in them.

Europe has been training her children in these manual schools for some time, so that while we have been indulging our girls in novel reading, frivolity, and uselessness, and our boys in anything but useful work, these Europeans have been quietly (and sometimes noisily and defiantly) filling our shops with skilled labor, till such American boys as are willing to work are crowded out of nearly every skilled employment of the land.

We have been astonished, in going through the machine shops and factories in different parts of the country, to find them nearly all manned, from foreman down to menial, by foreigners. At the great aqueduct now being built for New York, we were speaking to an engineer the other day of this monopoly by foreigners of nearly all our skilled labor.

"Why," said he, "there is hardly a great building planned, or a great engineering enterprise undertaken in this country, that is not from European brain and skill. A foreigner planned and superintended the Niagara Falls' great suspension bridge ; a foreigner planned and superintended the great bridge between New York and Brooklyn ; a foreigner planned and superintended the great New York Post Office ; and so we might go on citing a large majority of the great achievements of the country ; and all this is because, 1st, we are bringing up our boys to dispise good, honest, hard work, and, 2d, because Europeans have taken advantage of this to import, not only common laborers to fill our mines and factories with common labor, but skilled workman to fill our shops for the manufacture of watches, silver-ware, and all departments of art and machinery."

We asked a boss of a large manufactory recently where his

apprentices were. We were coolly told, "We do not deal in that article as much as we did." Referring this answer to the proprietor, he replied in substance:

"Yes, they have got us."

"Who do you mean by 'they?' " we asked.

"O, these workmen let us stay here on certain conditions, but they run the establishment. I don't know what we are coming to. They dictate their own wages, hours of work, and many other details of how and on what conditions they will work, and we must yield as their 'most obedient servants.' 'Apprentices?' Why, I don't dare hire one without asking them. To every hundred men in an apartment they may graciously consent to take six or eight apprentices, not more, often less, and even then they must please these journeymen; and that generally means some of their relatives, without much reference to their adaptation to the work, or their habits or industry. They being foreigners, of course, our own native boys just have no show at all."

We say again, it is well that American parents wake up to the startling fact that our American boys are locked out of nearly all our machine shops and factories; and that in nearly all our industrial departments, we are at the mercy of foreigners, and shall be till we have the kindergarten and technic schools in every city and populous community. Of course, our fundamental studies of intellectual training and information should be continued; but in addition to this, and to the displacement of much now taught, our boys must be taught not only the use of tools and *general* skill, and our girls not only fancy work, but the trades,—those adapted for boys, and those adapted for girls,—so that we can send them out in the bloom of manhood and womanhood equipt for the world's various occupations and necessities.

All our boys and girls must be taught that they are not prepared for the great responsibilities and conflicts and vicissitudes of life till they are skilled in some trade. *And our shops and factories must be open to them.*

**Implanting** an artificial tooth with a lead root. We have a grandson that is called Paul Parrot, because he is so apt to imitate all his older brother does and says. We have older Paul Parrots, and some that go even farther than bare imitations; they want to improve, and in many instances, they do so without judgment.

Do let us thoroughly try Dr. Younger's venture before attempting to outstrip even him.

These reflections and advice are suggested by an attempt of a dentist in California to make "an artificial tooth with a lead root grow in the human jaw." "If," well says our reporter, "If the outcome of the

operation should prove the success hoped for, a complete revolution will be made in dental science."

#### AMBIGUITY IN STYLE.

Many writers are either not thoughtful in the composition of their sentences, or they need to learn the art of clearly expressing their thoughts. Some writers seem to take more pains in bringing forward "high-flown" terms, and an appearance of profundity, than in presenting their ideas in sentences that are plain, clear and concise.

They remind us of an incident in the life of the celebrated Douglas Jerrold: "On recovering from a severe illness, Browning's 'Sordello' was put in his hands. Line after line, page after page, he read, but no consecutive idea could be got from the mystic production. Mrs. Jerrold was out, and he had no one to whom to appeal. The thought struck him that he had lost his reason during his illness, and that he was so imbecile he did not know it. A perspiration burst from his brow, and he sat silent and thoughtful. As soon as his wife returned, he thrust the mysterious volume into her hands, crying out, 'Read this, my dear.' After several attempts to make any sense out of the first page or so, she gave back the book, saying, 'Bother the gibberish; I don't understand a word of it.' 'Thank heavens,' cried Jerrold, 'then I am not an idiot.'"

Words, words, words! Nothing but words, seems to be the only verdict to be pronounced on some compositions. If there are good ideas interspersed here and there, they are so hidden as not to be discovered without severe effort.

Our language should be a transparent lense, through which we can so clearly see the clothed thought that we shall not be specially attracted by the dress.

#### SPELLING.

A little pamphlet, advocating a new system of condensed printing, states that it costs the London *Times* \$2,500 a year to use the superfluous "u" in the English spelling of such words as favour, colour, endeavour, etc., counting material, labor and space at advertising rates.—*The Epoch*.

More than a fourth, and some say more than a half, of our letters are superfluously used; not only adding greatly to the expense of printing, but still more seriously to the effort of learning to spell. When will our educators and the general public wake up to the determination for a change? We all *see* the evil, but we are all afraid to lead in its reform.

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"Tartar materially hastens the decay of the teeth."

We think not. We seldom find progressing decay under tartar. If a tooth materially decayed, becomes filled and covered with tartar, decay is checked.

Dr. A. H. Thompson, one of the associate editors of the *Western Dental Journal*, calls our magazine the "Reform Items of Interest." Will our friend explain? We know the *Western* is noted for its compliments,—how could the *Archives* live without them?—but here is something, we fear, not deserved.

Of course, Bro. Thompson does not allude to our, once in a while, deprecating the use of intoxicants and tobacco. It is true, there are few dentists who use one or the other, but still fewer who *approve* either. Certainly Bro. Thompson, and every other dental editor and practitioner, deprecates the use of these, and will hardly single us out as peculiar on this account. It is charitable to suppose most who use either are invalids, in some degree, and are using it as a medicine. They are sorry for the necessity, and would be still more sorry to see their wives use it for the same maladies; they are sorry for the necessity in themselves, but it is the prescription of a physician, you know. The patients of such delicate dentists bear with them on this account—that is, the more charitably disposed, and those who do not are cranks not worth propitiating, whether of one sex or the other.

It cannot be that the doctor refers to our "reform" in composition. We acknowledge, we do harp a trifle on the desirability for using as few and as plain words as possible in conveying ideas, though of course we would admit a few extra words for style and flowers, but not many for wind. It may be, we have stept on Bro. Thompson's toes in our criticisms in this direction, for we must say, when he "lays himself out to be heard" he is a little long winded, and a little difficult to decipher. O for a few more of Horace Greely's plain, short, terse sentences!

Perhaps Dr. Thompson refers to such little "reforms" as the following: On the same page that he calls our journal the "Reform Items of Interest," he speaks of "tic douloureux of the face." Now if he had been writing for the *ITEMS* we should have scratched from his manuscript "of the face" as superfluous, never having heard of tic douloureux of the big toe, or of any part but "of the face." Further on he tells us of a *fang* of a tooth. If he had been writing for the *ITEMS*, we should have taken the liberty of substituting *root* of the tooth. He has a right, in the *Western*, to speak of grammes and drachms, but in the *ITEMS* we should have had him speak of grams and drams; and so of diagram, program, etc.

If this is the "reform" he alludes to we plead guilty. We have become so disgusted with the nonsensical spelling of some words that where we can find authority at all respectable, we simplify the spelling. Lexicographers on the little Island the other side of the water, denounce Webster for simplifying the spelling of many words, but we like them and wish there were more of the same sort.

## *Miscellaneous.*

### HOW TO GET RICH.

In answer to a request of the Boston *Herald* to write some practical hints for young men on the acquirement of wealth, General Benj. F. Butler responds as follows:

A difficult task is set me, as circumstances under which young men commence life are so widely varied. But I think more young men fail in the investment of what they earn or receive than in any other way to acquire property. The temptations to speculate are so great, and the desire to become suddenly rich so strong, that I believe eight out of ten, if not more, of young men are wrecked at the very beginning.

If a young man is earning something more than the expense of his living, and has no object in view, he is likely either to increase those expenses carelessly or to loan his money to his friends, and in so doing in the majority of cases he will lose both friends and money. So that the best thing that he can do is to have an object, gather up his money and to have a call for it which shall be a profitable one. He makes no investment, because he says, "I have got so little money that it won't come to anything. I will wait until I get more;" and in waiting, generally, what he has goes.

When a young man has a very little money, let him buy some property, preferably a piece, however small, according to his means, of improved real estate that is paying rent. He had better buy it when sold at auction, under a judicial sale, paying in cash what he can, giving his notes for the balance in small sums coming due at frequently recurring intervals, secured by a mortgage on the property, and then use all his extra income in paying up those notes. It is always safe to discount your own note, and if the notes come a little too fast, as soon as he gets anything paid his friend's will aid him when he is putting his money where it cannot be lost, and where the property is taking care of the interest, and in a very short time he will find that he has got a very considerable investment. He will become interested in it, save his money to meet his notes, and he will directly come into a considerable possession of property, and hardly know how it came to him. That is, he will have had a motive for saving, and will get the result of that saving, and will not be tempted to enter into speculations. Nothing is so safe for an investment as improved real estate. Nothing is likely to grow in value faster. In the last 50 years 90 per cent. of all the merchants and traders in Boston have failed. In the last 50 years 90 per cent. of all the business corporations have failed or gone out of business, so that their stock has been wiped out. In the last 50 years all the improved real estate on the average has paid its interest and taxes and quadrupled in value. If a young man's father can give him anything to start him in the world, he had better invest it in that way and let it accumulate and earn his living, and he will be richer than if he had gone into business. Jay Gould is said to have started from a mouse trap seller to become a millionaire. Assuming that to be true, he is only one of 60,000,000 of people; and if any young man thinks

he is going to imitate Jay Gould, there are 60,000,000 chances to one that he won't succeed.

The rule I would lay down for a young man is, never do a mean thing for money. Be prudent and saving of your money. Be careful to have no interest account running against you, unless you have an equal or greater interest account running in your favor. Work diligently and you are sure of a competency in your old age; and as early as possible, if you can, find a saving, prudent girl who has been brought up by a mother who knows how to take care of a house, and make a wife of her. She will aid, and not hinder you.

I claim no originality in this advice, and will relate you an incidence in my own experience to illustrate it: In my earliest practice in my profession I was quite successful in earning money, and I had a small balance in the Lowell bank, at the head of which was Mr. James G. Carney. The bank was directly across the hall from my office. I stepped into the bank to deposit a little money on one occasion, and Mr. Carney said to me: "Why don't you invest your money?" "Invest," said I; "I have nothing to invest." "Oh, yes," he says; "you have quite a little sum of money, and I see that your young friends come with your checks occasionally, evidently borrowing it. Now you had better invest it." "How can I invest it?" "Invest it in real estate." "I know nothing about real estate." "Go to the first auction and buy the property. You cannot be much cheated in that, because you will have to give very little more than somebody else will be willing to pay for it. Give your notes for it, save your money, collect your fees, pay your notes as they become due. See that the property is improved property, so that the rent will keep down your interest account, and when you get any other money, invest it in the same way, and if your notes press upon you a little faster than you can pay them, why we will, when we find that is what you are doing with your money, discount your note and give you a little more time, so that you can pay it up. This will necessitate the prompt collection of your bills, for I know that you would rather work and earn a hundred dollars than dun a man for it, unless you have a pressing need for it. You have not even asked for a little bill that we owe you in the bank, which shows me that you do not promptly collect your dues." I followed the advice and bought a number of pieces of property in that manner, and I never did exactly know how they were paid for, but they were, and in a few years I owned some twenty different pieces of property in Lowell that came to me in that way. I can only say that I wish I had been wise enough to have continued this course through life.

I do not think that I need extend these suggestions any further, because if a young man won't mind these, he won't any others, and I cannot suggest any better ones.

I am, yours truly,

BENJAMIN F. BUTLER.

**It is a Fine Thing** to uproot your faults as useless and poisonous weeds; but unless you put in their place plants of virtue, your work will be disheartening. Let your garden be so full of good things, and these so well attended, there will be no chance for weeds. Then, too, by eating the fruit of these beautiful plants you will have no relish for weeds, nor for *the* weed.









